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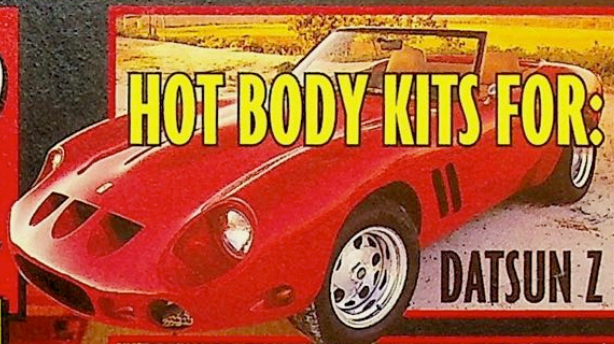
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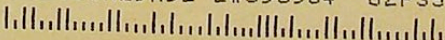
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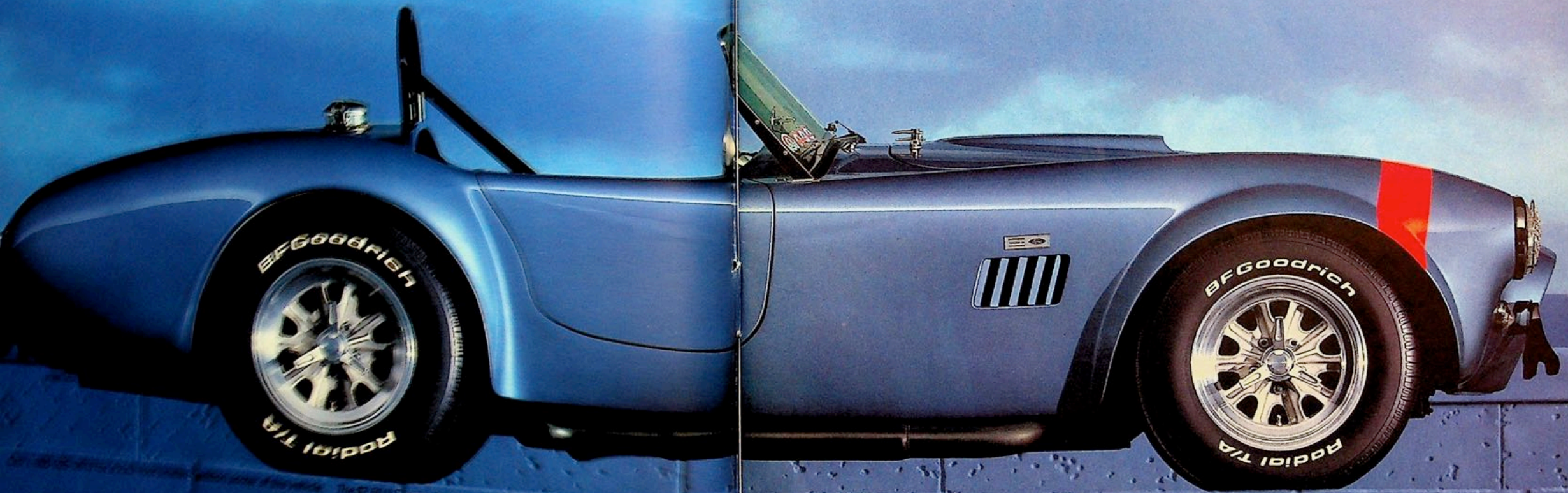
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July 1996 • Volume 15, Number 4

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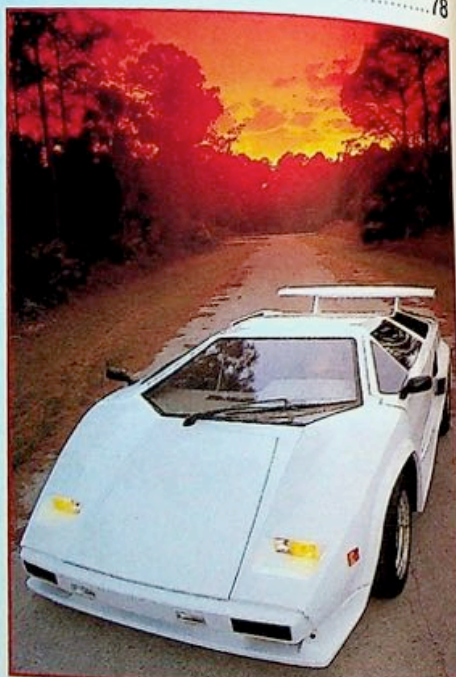
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Cover photos by Steve Temple, Jim Youngs and David Fetherston

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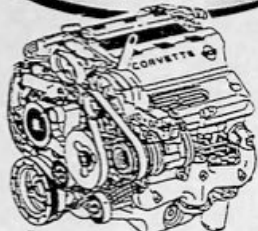
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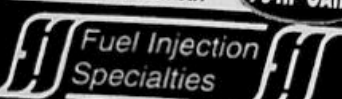
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6 KIT CAR

# UP FRONT

## It's Shooowtime!

By the time you have this issue in your hands, two of the biggest kit car shows in the country will have come and gone. If you missed these events at Carlisle and Knott's Berry Farm, don't despair. We will be providing in-depth coverage in the following issue, and Petersen Publishing's special events division has a jam-packed schedule of automotive shows presented by BFGoodrich. Whatever kind of vehicle you want to see or display, from hot rods to sport trucks or from 4x4s to customs, you'll find a venue to suit your taste. More than a



Rod magazine—will come alive in a two-day picnic of power sponsored by Chevrolet and BFGoodrich. It'll be a celebration of everything automotive, including our personal favorites—kit cars. Featured attractions for this year include a burnout competition on the dragstrip, eighth-mile side-by-side racing, giveaway prizes, live music, the Manufacturers' Midway, celebrity appearances, how-to seminars



## BFGOODRICH PRESENTS KIT CAR AND HOT ROD MAGAZINES' EVENT ON AUGUST 23-25



dozen events are planned for this season, but of particular interest to kit car enthusiasts is the Kit Car Corral held in conjunction with the Hot Rod Power Festival (see p. 65) on August 23-25 in Commerce, Georgia. The show site is the Atlanta Dragway right off the I-85 freeway, northeast of Atlanta.

The Power Festival's Corral is the only kit car show of any size scheduled in this region of the country and at this time of year. It's a great opportunity to see an exciting gathering of specialty cars. Last year's inaugural event got off to a soggy start ("Riders on the Storm," January '96), but despite the inclement weather, some really serious iron showed up along with a number of high-quality kit cars, and participants took home a slew of trophies. In fact, J.D. Robbins, a Cobra replica owner who entered the event, won a 502ci Chevy engine, and his car was also featured in Kit Car ("Cost Cutter," March '96).

This year, the pages of America's No. 1 automotive performance monthly—Hot

and a Miss Hot Rod swimsuit competition. (No, we don't have a Miss Kit Car equivalent, but our project cars draw plenty of attention all by themselves.)

If you'd like to display your kit car or hot rod, you can save a few bucks by preregistering before August 16 (call 800/858-6381 for more details; trade exhibitors should call 213/782-2731). I plan to be there not only covering the event but also judging cars for trophies and doing photo shoots for car features. Here's your big chance to see and be seen—don't miss out on all the fun!

Steve Temple

# KIT CAR

THE CAR BUILDER'S AUTHORITY

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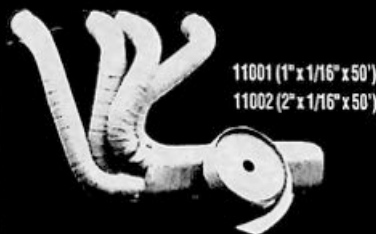


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8 KIT CAR

# MAILBOX

## THE CREEPING UNKNOWN

Several years ago I saw a kit car based on a full-length VW Type I pan. The kit is known as the Mroz Spyder and is loosely based on the Porsche Spyder of the '50s. It has no doors, and a rearward-tilting engine cover is its only moving part. Any information you could give me on this kit would be greatly welcomed.

John Liddle  
Universal City, CA

We'll have to have our resident automotive archaeologist, Harold Pace (see his new column, Kit Archives, in this issue), dig through his files for more information. As far as we know that kit is no longer available, but a similar concept is being developed by Perry Designs (909/279-6498).

## ZLATKO FACTOS

In your November '95 issue, you had a car called the Zlatko ("Dumb and Dumber"). I was wondering if the motor was positioned in the front or the back? What type and size motor did it have? I am designing a similar vehicle. I'm 13, and my father and I are building our first car from scratch.

Michael Powell  
Tupelo, MS

Michael, we had heard the Zlatko used a unique Croatian powerplant that ran on anti-matter (notice how the car seemed to suck in on itself?), but that rumor proved false.



As noted in the article, "The most excruciating part of it was that Zlatko chopped up a [mid-engined] Ferrari 328 to create this traffic accident." We admire your initiative, but we hope your scratch-built car doesn't look too similar to the Zlatko.

## KNOCK OFF THE KNOCK-OFFS

I am in partial agreement with a previous letter which scolded you for the "plagiarism" of the kit car industry. You responded that the developers are going to build what will sell. This plagiarism causes most car enthusiasts to perceive the kit car industry as "fibertrash." The Diva, the

Mastretta and the Ultima are unique, and their designers deserve credit for their efforts. So for kit car producers, a challenge instead of a reprimand: We know you can do knock-offs. Can you do originals?

Also, a quick question. Bruce Meyers made another kit, beyond his Manx; it was a more serious car, which even made some effort at enclosing the driver, and it had bug-eyed-styled rectangular headlights. Can you identify this kit from my remembrances? Thanks for the enjoyable magazine.

Bob MacCloskey  
Annandale, VA

The vehicle you have in mind was called the Manx S.R. (street roadster). From designs sketched by Stewart Reed, Meyers developed the concept into a workable prototype while he was recovering from a crash in an off-road race in Mexico. This kit was much more complex than the Manx dune buggy, with 13 different fiberglass components. For more details, check out Bruce Meyers' newsletter for members of the Manx Dune Buggy Club, Dept. KC, P.O. Box 1491, Valley Center, CA 92082.

## REALITY TESTING

The most helpful piece of information that you could give your readers, you will not! I realize that it is more lucrative to make your advertisers happy (even the ones who give poor service and/or quality) than it is to tell your readers one simple truth. The truth is that buying the "real thing" in many cases is fiscally feasible when you look at the final cost of a completed kit. I rarely see mention in your magazine of this fact; I surmise why. All things considered, you do cover the plastic car niche well. Good work.

J. Reeves  
Glen Burnie, MD

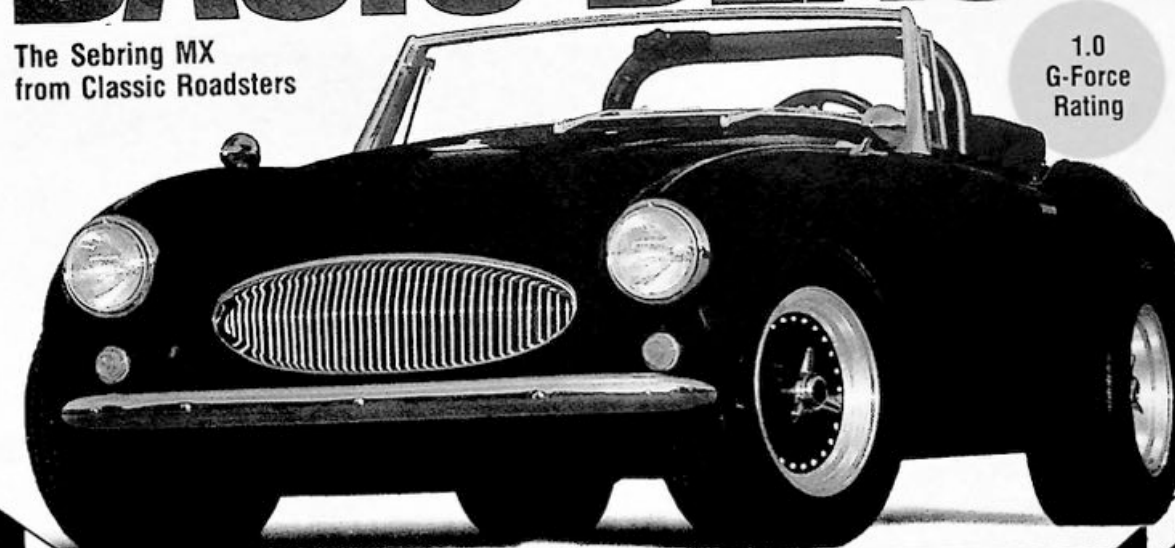
The "simple truth" actually depends a lot on the specific car. Replicas of Cobras, Ferraris, Mercedes, Porsches and Lamborghinis are clearly far less expensive than the original vehicles. It sounds as though you haven't checked out auction prices lately.

Letters in Kit Car reflect the opinions of the writers and do not imply the endorsement of this magazine. All letters should be addressed to Mailbox, Kit Car, 6420 Wilshire Blvd., Los Angeles, CA 90048-5515. Letters should include the writer's name, address and telephone number. We reserve the right to edit letters for clarity, brevity or other editorial purposes. Due to the volume of mail received, we cannot answer letters privately.

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# & WHITE HOT



# SPECIALTY SCENE

By Lynn Marie

## WARLOCK 355 COUPE

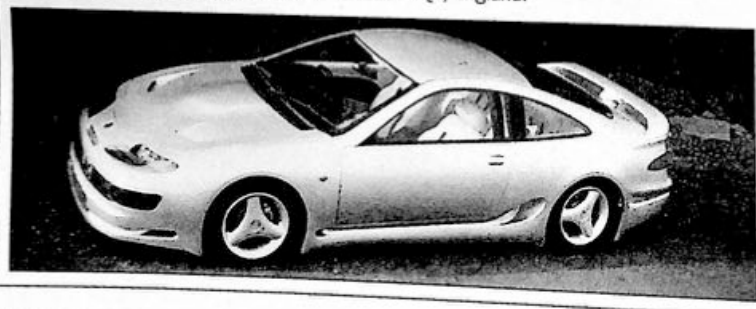
Never have we seen such an enthusiastic response to a new Fiero rebody kit. After we showed you a sneak preview of Warlock's 355 Spyder replica ("A Penny Saved...," March '96), the company was flooded with thousands of inquiries. As a result of this intense interest, Warlock is developing a 355 Coupe model as well. We've seen the mold plug under construction, and it looks every bit as exciting as the Spyder. The hardtop 355's introductory price is \$7500 (regular price \$9500). In addition to the 24 components provided with the \$5500 Spyder kit, the Coupe version includes rear quarter-windows and a wraparound rear window. Also, the Coupe's rear clip has an integrated roof and sail panels. To install this new



body kit, the Fiero donor car's chassis must be extended 3 inches and a tubular support added for the rear clip. A targa model also will be offered. Warlock Designs, Dept. KC, 15740 El Prado Rd., Unit B, Chino, CA 91710, 909/597-3621.

## ROYAL TREATMENT

Lest ye think from watching the antics of the Royals that the British have lost all refinement and good taste, feast your eyes on this elegant new design from Clayton Hamilton Automotive Design (C.H.A.D.). Regular readers may recall Hamilton's Finale Fiero rebody ("Easy Money," March '95). His new project is called the Supersport 4 (in part because the cabin accommodates four passengers). This British beauty uses components from a Mercury Merkur donor and can be outfitted with blue-blooded mills ranging from a turbo Cosworth to a 220ci alloy Rover V8. C.H.A.D. plans to develop a U.S.-spec model in both kit and turn-key form which will accept either a Ford or Chevy small-block V8 and a Ford Thunderbird independent rear end. Hamilton claims that wind-tunnel testing on a 1/8-scale model at speeds up to 185 mph indicated excellent downforce characteristics, virtually even from front to back. Clayton Hamilton Automotive Design, Dept. KC, Unit One, Orchard House, Beeleigh Rd., Maldon, Essex CM9 7QJ, England.



## A WALK IN THE CLOUDS

For those kit builders who feel the urge to fly like an eagle, there's now a new publication to help you reach your dream. Kit Aircraft Builder features a wide array of aircraft available to the kit builder, from sea planes to helicopters to a replica of a P51 Mustang. The mag also has tons of tech information on the best ways to put them together. Kit Aircraft Builder, Dept. KC, 1313 Paseo Alamos, San Dimas, CA 91773, 909/599-6341.



## DEPARTMENT OF CORRECTIONS

In our March '96 "Hot Wheels" buyers' guide we stated that Acker Wheel chromes both original and aftermarket wheels. That information was incorrect, but the company does have an inventory of more than 55,000 factory-original wheels which date from 1945 to present and may be used on late-model donor cars. The company's wheels offer a great way to retain a stock O.E.M. appearance on your kit car. Acker Wheel, Dept. KC, 771 Coleman Ave., San Jose, CA 95110, 800/9WHEELS, 408/275-1218 in CA.

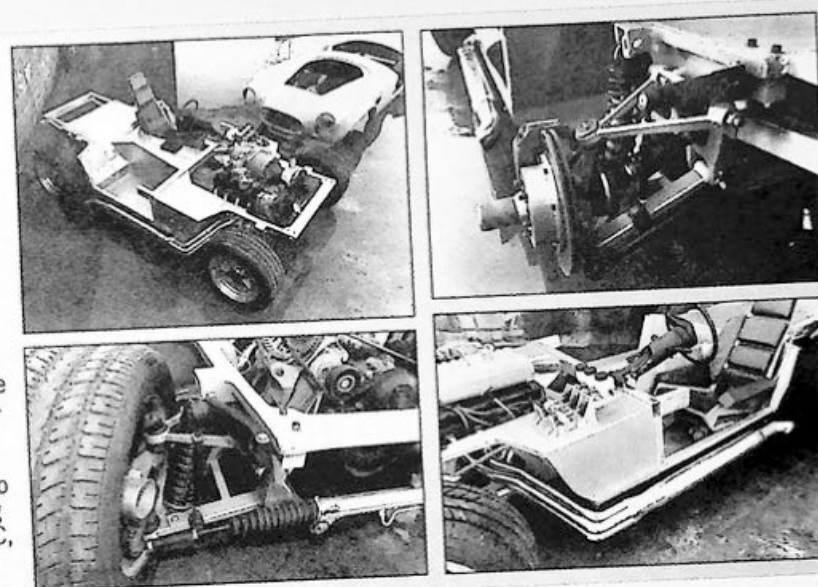


## PIERSON'S PROJECT

Henry Pierson has come up with a unique and fluid new design called the Otter. Priced at just \$5000 (for the body and frame), its tubular-steel chassis has a 98-inch wheelbase and uses '85 or newer VW running gear. Due to the mid-engine configuration of the chassis, however, the front subframe struts have been modified to accept rear springs to handle the change in weight bias. The chassis will accept a wide range of late-model VW engines and transmissions, including the newer 175hp V6. Pierson estimates the car's weight will be between 1600 and 1800 pounds and claims its handling will be similar to that of a 914 Porsche. Henry Pierson can be reached at 813/870-2501.

## FRAME JOB

The V.S.E. backbone chassis, which the company claims is 10 times stiffer than a conventional ladder frame, now has a few new features. It's available with cast-aluminum front and rear clips, which V.S.E. says will reduce the overall weight by as much as 100 pounds. Also, the chassis features an independent rear suspension that uses a combination of Ford Thunderbird and V.S.E. components. At the front are custom-fabricated A-arms with cast-stainless-steel uprights. Borla supplies the stainless-steel side pipes. Auto Sport Performance Products (602/966-9906) furnishes the custom-fitted fiberglass body, although the V.S.E. chassis is designed to accept other body types as well ("Getting Blitz'd," September '95). V.S.E., Dept. KC, 23865 Fairfield Pl., Carmel, CA 93923, 408/649-8423.



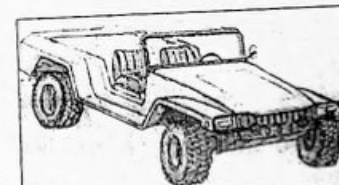
## T-RIFIC

Buckets of buckets! That's what you can expect to find at the 2nd Annual Model T Nationals, July 4-7, 1996, in Worcester, Massachusetts. This event will be part of the 6th Annual New England Summer Nationals and will feature hundreds of T buckets, along with lots of other rods and customs. Also, there will be fun, games, music, burnouts and flame-throwing contests. Speaking of Ts, Total Performance has a new 25-minute product video which includes a shop tour, driving shots of the T bucket and information on the Pro Street T and the Totally Teal '32. The video can be purchased alone for \$14.95 or as part of the Deluxe T Owners Package, which for \$49.95 also includes a catalog, an assembly manual and a T-shirt. Total Performance, Inc., Dept. KC, 400 S. Orchard St., Wallingford, CT 06492, 203/265-5667.

## BAJA HUMBUG

It seems as though sport/utility vehicles are all the rage nowadays, so Vintage Speedsters is developing an ultra-light, low-buck alternative called the Humbug. As implied by its name, the Desert Storm styling stems from the sturdy Humvee military vehicle, but the rest comes from a VW Bug. Priced at only \$3950, the Humbug kit will consist of a one-piece body with a molded-in, dash-steel-reinforced cockpit liner, all designed to fit on a stock-length VW pan. The dash-board, hood, lights, windshield, steel bumper, brushguard and aluminum skid plate are separate, bolt-on items to be included with the kit. Options will include bucket seats, an oil cooler, a rollbar, a softop and larger wheels and tires.

In other news from Vintage Speedsters (310/402-4334), its Auto Classics International (ACI) division has been dissolved. A new company called Vintage Spyders has been formed to continue production of ACI's Porsche 550 replicas ("Giant Killer," March '96). Headed by Greg Leach, a former employee of Vintage Speedsters, the new firm is located on the same premises and has made a few changes to the ACI kit. The custom chassis is made of 4130 chrome-moly tubing, and the front suspension is a stock VW Beetle torsion bar unit. The price of the base package is \$8900, and a rolling kit starts at \$13,500. Vintage Spyders, Dept. KC, 12112 Centralia Rd., Hawaiian Gardens, CA 90716, 310/865-6331.



## MOMMA MIA—THAT'S A SPICY CAR

Marcello Italia Sports Car Design has introduced a replica of the Koenig Competition Ferrari Testarossa.



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# KIT CARCHIVES

## DOORS OF PERCEPTION, A STERLING SAGA

By Harold Pace

In the never-ending quest to do something different as opposed to something better, kit designers have settled on unusual—which sometimes means unworkable—door treatments as the focal points of their designs. Kits have been built with one, two, three and four doors hung in every conceivable (and not so conceivable) fashion. There have been gullwing doors (Cimbria, Fiberfab, Banshee), suicide doors (Auburn and '34 Ford replicas), see-through doors (Invader GT), removable doors (Lotus Seven) and, my favorite, no doors (dune buggies). My preference for step-in design stems from many hours spent attempting to hang doors on kit cars, a task that would have been among Hercules' labors had he come around a bit later.

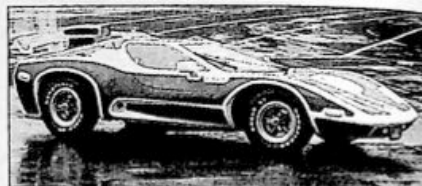
This month we'll look at a kit that did away with the doors altogether but still provided an enclosed cockpit: the Sterling/Nova/Sebring variations. First conceived by Englishman Richard Oakes in 1971, this Nova was a dramatic fiberglass coupe based on VW running gear. Engineered by Phil Sayers, it used an uncut '47-'74 Beetle pan (but not the Super Beetle) and featured a lifting cockpit roof section instead of doors. Two gas-filled cylinders allowed an owner to "raise the roof" with ease. This head-turning feature (a similar treatment was used on the '64 Fiberfab Aztec) worked reasonably well except for a couple of minor problems. The side windows could not be lowered (later American versions had windows that pivoted out on the bottom for ventilation). Any guesses as to what the other problem was? Be thinking.

The parent company, Automotive Design and Development, built Novas in Great Britain until 1975, when its high price (for a kit car) combined with the oil crisis began to spell doom for one of the best-styled and best-engineered British kits. At one time Novas, with minor differences, were built in the United Kingdom, United States, France, Italy, Switzerland, Austria and South Africa. Production in England switched to other companies, with several sets of molds being passed around to this very day.

So how about the U.S. version? Called the Sterling (hard-core kit enthusiasts may be astonished to find that Chevrolet



Bruce Miller of Crestwood, Illinois, started out his Sterling project with a '71 donor he snagged for only \$300. After scrounging through two junkyards owned by his uncle and doing some custom fabrication on the tail and in the cockpit, he took six months to apply the Big Daddy Roth paint job with lace patterns. As a reward for all his efforts, he took a First Place win at the World of Wheels Show.



built a sedan called the Nova and had first dibs on the name), it went into production in 1974 in San Lorenzo, California. The first Sterling manufacturers were Cecil Robertson and Norm Rose, who built them until 1980 when Paul Lacey took over.

The Sterling was an immediate success because of its high quality and because most of the assembly was done at the factory, making it easy to complete. Cockpit height was cramped for 6-footers, but shorter drivers found the cockpit cozy once they stepped in over the low sills. Driving position was nearly horizontal, and the small steering wheel made the standard VW steering feel quicker. Weight was a reasonable 1750 pounds, and the optional mag wheels and fat tires gave the Sterling a sporty, if not formidable, performance. In 1975, the kit sold for \$2795.

By 1985, the Sterling was being built by California Component Cars in San Jose, California, and a host of minor improvements had been made. The floor now had a 4-inch drop to accommodate tall drivers. The rear of the body was subtly stretched to allow room for a V6 or V8 transplant onto the VW transaxle to give the Sterling a level of performance commensurate with its styling. Sterlings

could now fit the Super Beetle chassis.

For reasons probably known best to their lawyers, Sterlings built by California Component Cars around 1980 were called Sovrans. These Sterling variations can be identified by their larger, squared-off wheel openings. By 1985, the Sterling moniker had returned, along with the more graceful original wheel openings. Headlights were now retractable.

Road & Track magazine featured the Sterling in the September '75 issue. The article praised the quick steering and noted that the light weight and low profile reduced body roll and camber change present in the VW bug. The shortened shifter and Hurst linkage made gear changes faster and more precise. The article said that the wide radial tires fitted to the car had a positive effect on the handling and that all of these factors made the Sterling seem much more a sports car than expected from a basically stock VW with a kit body. The writer concluded that the Sterling gave the appearance of an exotic car without the expensive maintenance and poor gas mileage.

Al Hildenbrand, president of ARX Industries (later Bremen Motor Corporation), had been a Sterling distributor and felt he could do better. By

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1980, he had introduced the Sebring, which looked like the mildly restyled Sterling that it was. The nose was chopped back and the headlights (open on the early Sterling) were retractable. A stronger bumper was added to the front for extra protection of that long, low nose. The headlight placement was also raised to meet minimum height requirements in some states. Two rows of louvers lined the hood to provide cooling should the buyer prefer water-cooled powerplants with a front-mounted radiator. An electric-power-top option made the easy-entry cockpit work even better, and the lower body air scoops used on the Sterling were eliminated.

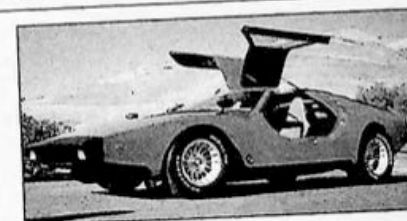
As on the later Sterling, to gain room for the vertically endowed the Sebring provided its own floorpan that allowed drivers to sit lower than the standard VW pan. This modification required taking a torch to the Beetle floorpan, but it left critical assemblies such as the pedal box intact. ARX also reportedly offered a mid-engined chassis with a turbo VW Rabbit mill and Pinto front suspension.

Sterlings are relatively common (as kits go) and the price is usually right. Look for a later model with the swing-out side windows and a dropped floor that hasn't been butchered. Consider an air-conditioning system a plus in hotter climates, as the large glass area and

marginal ventilation can cook you (don't feel alone—Mercedes gullwing drivers used to motor about town in hot weather with both doors open ballerina-style above their heads). Oh yeah, that other problem I alluded to earlier: Don't turn the car over. The "door" doesn't work worth a damn upside down!

## THE UFO PAPERS (UNIDENTIFIED FIBERGLASS OBJECTS)—ANSWERS TO QUESTIONS ON OLDER KITS

Here they are—the shocking photos of UFOs dissected by government scientists! Hear the owners scream as they realize no parts of their kits will interchange with any car ever built on earth! Kit Car wants to help. You have been kind enough to send in photos and questions about mystery cars that defy explanation. I dug through dusty bins of dog-eared magazines, faded photocopies and yellowed sales brochures in an attempt to identify these kits for readers bold enough to admit they bought them without knowing what they were (car people after my own heart). Sometimes I get lucky. Here are the ones that are no longer mysteries.



## Aztec 7...The Gods Are Angry, and They Want Money

I recently bought an '84 Aztec. It has a three-piece fiberglass body with gullwing doors on a VW pan. I'm slowly rebuilding it, but I need info on donor parts, especially the windshield. I also need info on the wiring kit. The dash has full VDO instruments.

Bill Schoof  
Manchester, NH

Bill, I hope you're sitting down when you read this—the windshield for the Fiberfab Aztec 7 comes out of the rare and exceedingly valuable Lamborghini Miura built in the '70s. No, this is not some cruel joke. Your best bet is to contact the Lamborghini Club (P.O. Box 7214, St. Petersburg, FL 33734) and find out where its members get their windshields. Another possible source is the Kreimeyer Company (405/789-9499). Or you might

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# KIT CARCHIVES

try your local junkyard. ("Hey bub, how much for the 'shield outta that Lambo over there under the burned-out Testarossa?") Well, maybe not. When Fiberfab was in business, it had a supplier that provided the glass, but finding that company now could be tough.

Other than that "minor" detail, the Aztec 7 was a pretty neat car. It was loosely based on a one-off show car called the Bertone Carabo that had been popular on the car show circuit in

Europe. The Carabo (named after a species of green-gold beetles) was built on an Alfa Romeo T-33 race car chassis and was fittingly painted metallic green. Fiberfab borrowed some of the Carabo lines for the Aztec 7, although it is not an exact replica. The Aztec 7 used a VW pan but lowered the floor for additional headroom. It was a completely different design from the earlier Aztec that Fiberfab had built. The three-piece body used electrically operated concealed

headlights. Gullwing doors were installed at the factory and were reinforced on late-series cars. A single windshield wiper covered the entire expense, er, expanse of windshield.

The interior featured VDO gauges and an overhead console for stereos and switches. A deluxe kit included the body, doors, interior, gauges, bumpers and hardware. It was also offered in pre-assembled form. Although intended for VW power, Aztec 7s were built with everything from electric motors to mid-engine V8s, and they sold from the mid-'70s to the early '80s.

## Multiple Manias

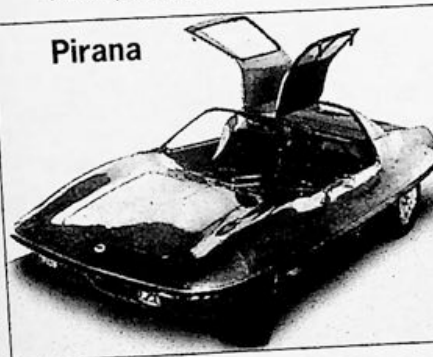
Some readers can't decide which distinctive or oddball car to slave away on for the next couple of years, so they have written for advice. This is potentially dangerous, as I have owned 50-something weird or exotic cars, a few of which even ran. Generally, the less practical they are, the better I like them. I would gladly walk over most ordinary cars with golf shoes on to get to a striking original design, even if it would take five years and countless scarred knuckles to straighten the twisted old wreck out. A man after my own heart is Ray LeBlanc of Camberville, Michigan. He wants to know about three cars, starting with a rolling chassis made by Cargem Sales in Michigan. Sorry, not specific enough. Cargem made a variety of chassis in front and rear engine configurations in the '80s.

The second car, the Puma GTC convertible, is more familiar. Pumas were fiberglass bodies built to go on the VW chassis. The first Pumas were expensive prestige cars built by Puma Industria de Veiculos S.A. in Brazil from a design by Genaro Malzoni. Although Pumas powered by a DKW (a three-cylinder German engine) had been built since 1964, production of the fully assembled VW-based cars didn't begin in 1967. Three versions were offered: the GTE, the GTI and the GTC convertible. All had 10 inches taken out of the pan, which was based on the Karmann Ghia built by Volkswagen of Brazil. Cars intended for the States were yanked off the line before the running gear was installed and a safety glass windshield was substituted. This meant the Puma was one of the easiest kits to assemble, as most of the work was done at the factory.

There were numerous U.S. dealers until the last Puma was sold in the mid-'80s. Of approximately 20,000 Pumas built, about 2000 stalked North America. They were equipped with extras that few kits of the same era ever included, such

as full wiring, a tool kit, safety flares and a key in the ignition! This is one of the all-time great kits for fit, finish and good design, and yet it sometimes sells for ridiculously cheap prices. You could do worse. Lots worse.

The last car Ray asked about is a personal favorite of mine, the AMT Piranha. Like the Puma, it was never intended to be a kit car. First built in prototype form by Centaur Engineering in Michigan, it was bought by Marbon Chemical, a division of Borg-Warner. Marbon Chemical used it to develop Cyclocac, a plastic that phones are made of today, for body construction. It was named the Cyclocac Research Vehicle, or CRV. Later, the company licensed the production rights to model car giant AMT, which hired master stylist Gene Winfield to develop it into a showpiece and possible production car



Piranha



Puma

called the Piranha. Seven were built from 1966 to 1968, including a Chrysler Hemi-powered dragster and a Corvair-powered road racer. Needless to say, AMT sold a scale model of its own car, which you can sometimes find at swap meets. All the street cars were Corvair-powered and used a molded plastic monocoque chassis. Girling disc brakes were used at all corners. One was customized and used in the popular TV show *The Man From Uncle* and was equipped with enough Bondian weaponry to make an Aston Martin turn tail.

After it became obvious that it could not be sold economically as a production car with such a complicated chassis, AMT scuttled the project. Later, the Piranha shape showed up in ads for Sportland Unlimited, which was another name for

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Allied Industries, a prolific kit manufacturer in Lincoln, Nebraska. In the early '70s Sportland offered the body in kit form as the CRV, but it was based on the VW chassis. Body construction was of vacuum-molded ABS plastic instead of fiberglass. It was sold in convertible form, but a hardtop with gullwing doors was available. A deluxe kit included bumpers, a rollbar, a windshield and frame, and seats. The full-length pan was used, and it was supposed to be a fairly simple kit to build. They are very rare and have been out of production for some time. If you should come upon one of the seven AMT Piranhas, snap it up! It's

a classic. The Sportland kits are of unknown quality, so be careful. Overall, a striking shape that still looks futuristic today. Keep those mystery kits coming in, the weirder the better! **KC**

Help! I need historic kits to write about so the editor won't cancel my column. Send photos and descriptions of kit cars you can't identify or would like to know more about to: Kit Carchives, Kit Car, 6420 Wilshire Blvd., Los Angeles, CA 90048-5515. Sorry, but we cannot guarantee that all material will be returned.

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By Steve Temple

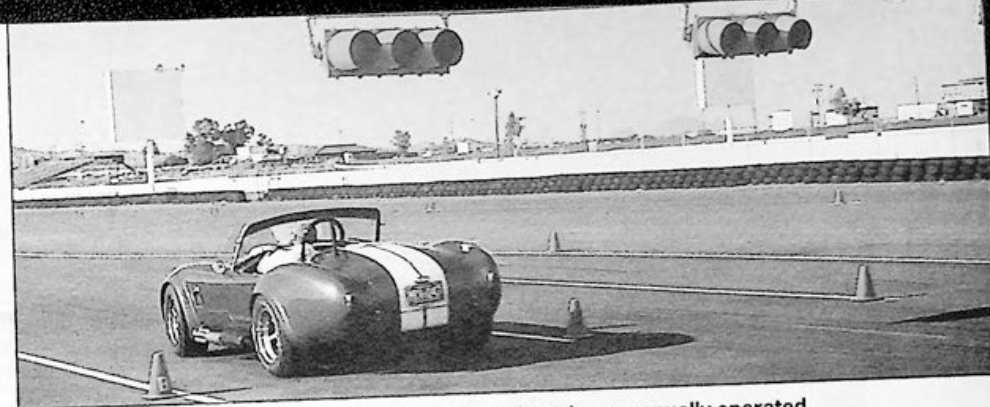
How come everybody wants to own a Cobra? It's too narrow, too short and too powerful. The answer is simple: It's just too much fun. The fervor for this vicious reptile seems like something out of a backwoods snake cult. Problem is, just like those cult members, a lot of people think they're immune to snakebites, including your editor—at least until I spent some time with the master snake wrangler, Bob Bondurant. In case you didn't know, he was one of Carroll Shelby's key Cobra drivers that beat Ferrari on its own turf during the World Manufacturers Championship in 1965. Since then



Bondurant has achieved numerous other victories in motorsports—but his Cobra crown shines the brightest.

These days Bondurant spends most of his time running a highly regarded driving school in Phoenix. During the past 10 years, more than 60,000 students have been trained at the school. Ford Mustangs are the most popular rides in Bondurant's stable, but he also has Formula Ford open-wheel racers, sport trucks, police cars and oval-track cars. And now Cobras too. Cobras?!

Bondurant has never lost his love for the car that made his reputation. And after we requested his expert evaluations on several replicas (September



The Cobra course trains drivers to avoid accidents by using a manually operated lane-change lighting system. The key is to lift, steer and throttle around the accident.

Although many late-model production cars have automatic braking systems, most Cobra replicas don't. Bondurant teaches the technique of threshold braking, which is essential to prevent the lock-up shown here.



Bondurant's son Bobby, who is an accomplished racer in his own right, coaches your editor Steve Temple before he heads out on the

# SNAKE WRANGLER



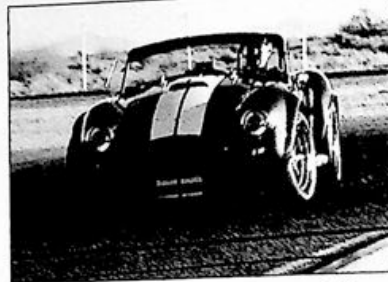
'92), Bondurant began thinking about other ways to share his hard-won Cobra driving skills. He also began thinking of ways to create a more user-friendly replica. After shopping around a bit, Bondurant realized he didn't want to spend his time building kits, so he decided to be a dealer for an imported product that comes 99 percent assembled (less the engine and transmission). The Superformance Cobra (see "Out of Africa," January '96) can be up and running in less than a day, but Bondurant prefers to take a second day sorting it out on his roadcourse before letting it loose in the customer's hands. Both small- and big-block Fords can be installed by Bondurant's mechanics, but his engine preference, as on the original Cobras he raced, is a Ford 351W. Bondurant likes the Ford 351W because it provides better balance and handling, with less weight up front.

Although Bondurant believes Superformance's \$29,800 factory unit is a fine street car right out of the box—or rather, freight container—he feels the unit can be refined for high-performance roadcourse duty. To that end, he had his crewchief Dean Borchert tweak the stock suspension (see feature "Secrets of Chassis Tuning" elsewhere in this issue). The factory may eventually end up incorporating some of these changes into the stock product.

Bondurant has high praise for Jimmy Price, president of Superformance. "[Price has] really worked hard to make this an affordable Cobra with a high level of performance—and he's willing to listen too," says Bondurant. Once he is completely satisfied with the chassis tuning, Bondurant plans to offer his special signature edition.

Before kicking off his Cobra course, Bondurant needed a guinea pig. That's where I came in. Sure, he's nearly perfected his teaching program using the Mustangs, but a Cobra is a whole 'nother animal. Since we previously had worked together evaluating Cobra replicas, I volunteered to be the first student through the two-day, \$1995 course (which is available at a discount with the purchase of a Cobra from Bondurant). Even though he is a Superformance dealer, prospective students can bring just about any brand of Cobra through the course.

I had gone through a three-day course in a Mustang a few years ago, and I found at least a couple of points had changed in the interim. Almost all of the late-model Mustangs at the school are now equipped with an automatic braking system (ABS), so threshold braking (applying pressure



Bondurant demonstrated some of his techniques from the slip-and-slide era.

right to the verge of lock-up) is no longer stressed. Nearly all Cobra replicas on the market still have conventional hydraulic brakes, however, so this technique is still mandatory for high-performance handling.

Another change is the double-clutch heel-and-toe technique to match engine revs with rear-wheel rotation to allow for smooth downshifting. (This requires operating the brake and gas pedals simultaneously with the right foot while engaging the clutch with the left.) For simplicity, the instructors now allow students a single-clutch action (though Bondurant and other instructors still prefer the double-clutch method to prolong the life of the synchro). The heel-and-toe technique is harder with a Cobra for several reasons: The pedal and lever action require more effort and longer throws, the throttle response is much more intense, and there's less room in the footbox.

Handling a Cobra ain't easy, but once you get it right, it's a heckuva lot of fun. I started out alternating between the Cobra and the Mustang in various driving exercises. It was immediately obvious just how different the two cars are—everything in the Cobra is cranked up a notch tighter and happens a half-click quicker. A mistake that might merely embarrass you a little in a Mustang could really hurt you a lot in a Cobra.

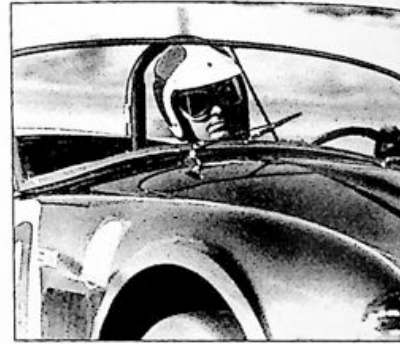
For instance, one of the first exercises is the throttle-steering circle, in which you basically pull donuts while steadily increasing the throttle to get the feel of the weight transfer and how it produces understeer (pushing



Bondurant continues to enjoy competing in such events as this '93 vintage race in Palm Springs, California.



In the Cobra Daytona Coupe, Bondurant won LeMans in 1964 with Dan Gurney, and he took the World Manufacturers Championship title in 1965.



Bondurant also excelled in the 289 FIA Cobra roadster, winning all three hill-climb events in Europe in 1965.

to the outside of the turn). As you increase in speed, both the Mustang and the Cobra drift to the outside, but the Cobra's acceleration is so powerful that if you don't roll on the throttle smoothly, the car can head straight off the circle (or street) in a heartbeat (something I was reminded of on the roadcourse the following day). In other cases, too much throttle will kick the rearend loose and cause abrupt oversteer; and if you lift off the throttle too quickly, the front tires grip instantly and the rearend snap-rolls around.

While the Mustang readily forgives small errors in judgment and timing, the Cobra is utterly ruthless, and it pounces on you for the slightest oversight or moment of inattention. At my suggestion, Bondurant agreed that overeager students (myself included) should start out in Mustangs to warm up with the basics before trying to manhandle the much more demanding Cobra.

The level of skill required for operating a Cobra is also evident on the slalom course. Rather than making a smooth S-shaped line around the cones, the driver must use crisp, brief steering inputs, almost in a zigzag fashion. Otherwise, the Cobra's tail gets light and loose, and it starts to, well, snake around. A light, sure touch is essen-

tial, especially with the car's super-quick racing-grade power steering (although Bondurant did point out that he was still fine-tuning the ratio on the rack).

In the classroom, instructors stressed the importance of concentration, smoothness, consistency and anticipation—all of which apply doubly for driving a Cobra. One's awareness of sensory feedback from the seat, pedals and steering column is also important. A driver's sensitivity to side-to-side and front-to-rear weight transfer makes a critical difference in the size of the tire contact patches—which are the only things holding you on the road. Trail braking, or gradually decreasing pressure before and while entering a turn, prevents loss of the rear tire patches. A diagram on the board illustrated how important taking the correct line around a curve is in any car, but recovering from an early apex (cutting the corner too soon) is much more difficult in a Cobra.

These points were reinforced on the autocross (a winding course set up between pairs of cones). I started out in the Mustang and nailed the quickest time right from the get-go for that particular class of students (but maybe this was the tour group from the Blue-Hair Rest Home). It took several tries for me to finally beat my own time in the Cobra, despite its power and weight advantages (perhaps having my publisher Skip Johnson sitting beside me in the passenger seat affected my performance a bit).

So what happened on the roadcourse portion? Well, Bondurant first took me for several hot laps on the course, and I was fascinated by his relaxed, almost carefree manner in contrast to his intense footwork on the pedals. It was a mixture of artistry and hard-core competition—an effortless combination of Gene Kelly singing in the rain and Pelé scoring goals in a World Cup soccer match. Bondurant stressed the importance of taking a building-block approach, working on a series of different skills individually and then integrating them into a whole. Of course, that's a whole lot easier said than done—the first time I tried to remember all the things I'd been told, I felt as if I were trying to tie my shoe, walk a tightrope and whistle a tune all at the same time.

The Mustang was relatively easy to run hard on the roadcourse, but during my few passes in the Cobra I felt like a clumsy oaf. After several hot laps, I lost it on two turns, once from jabbing the throttle too hard in the slalom, another from taking an early apex on a broad, sweeping turn. The instructor's advice "When you spin—



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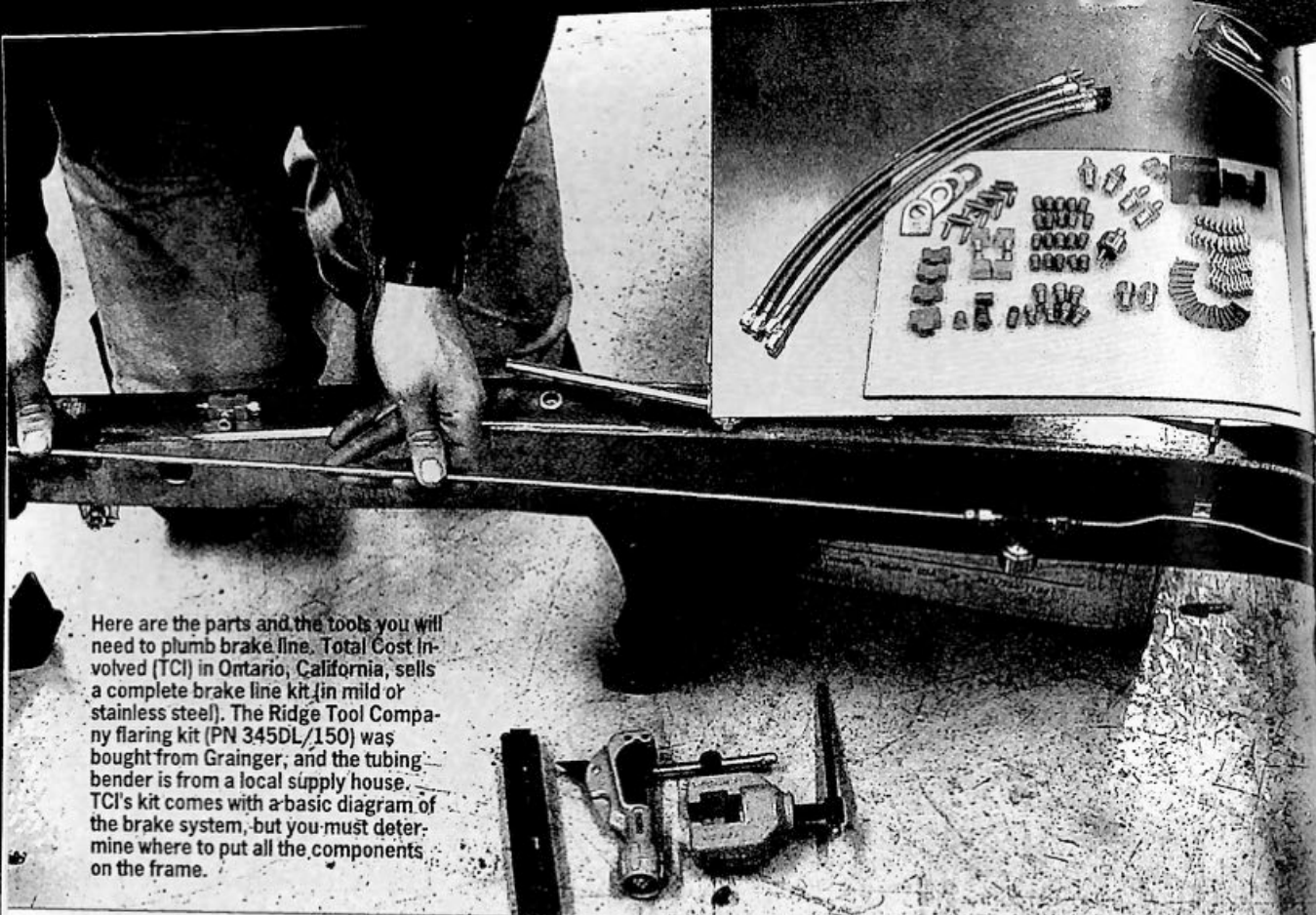
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both fit in!" came to mind right away, and I managed to keep the car on the pavement. Bondurant later thanked me warmly for not breaking anything on the Cobra (well, that's worth something). Later, I ran the course mostly in Third and Fourth, which made heel-and-toeing much easier, and suddenly everything began to work together. I actually started to relax and enjoy myself. I'm no Gene Kelly, let alone Pelé, but I managed to hoof my way around in rhythm with the music from the side pipes. Sure, a Cobra takes a lot more work and requires

much better timing, but one thing's for sure: Bondurant's Cobra course really tightened up that loose nut behind the wheel. **KC**

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Here are the parts and the tools you will need to plumb brake line. Total Cost Involved (TCI) in Ontario, California, sells a complete brake line kit (in mild or stainless steel). The Ridge Tool Company flaring kit (PN 345DL/150) was bought from Grainger, and the tubing bender is from a local supply house. TCI's kit comes with a basic diagram of the brake system, but you must determine where to put all the components on the frame.

# PLUMB JOB

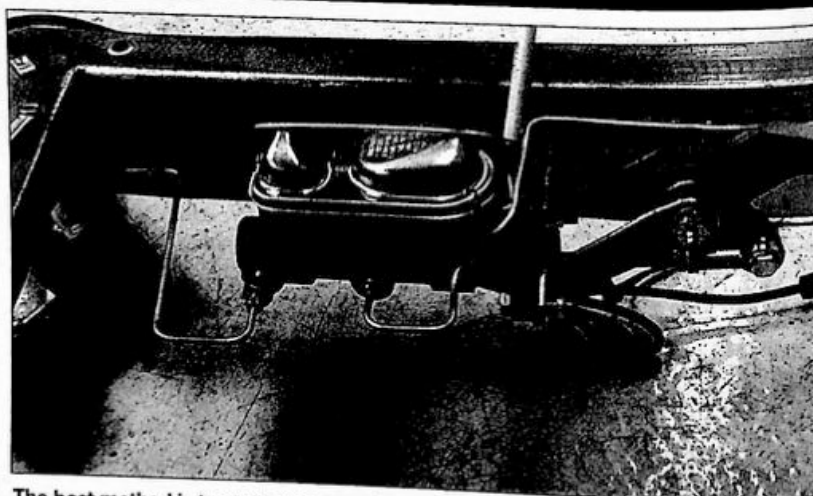
## How to Bend Hard Brake Line

By Will Handzel

Of the many tasks required when building a kit car, one that can be confusing and frustrating is plumbing hard line (especially for inexperienced builders). Few homebuilders know what parts are required, what tools are needed, how to use the tools, how the system should be laid out and how to avoid common problems. This article will answer these questions, allowing you to bend up hard line with confidence on your next project.

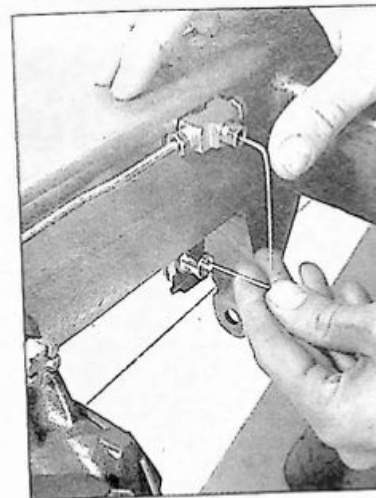
The photos show a brake line system being installed on a Total Cost Involved '31 Model A frame, but the tips listed here work for almost all hard line plumbing situations.

22 KIT CAR



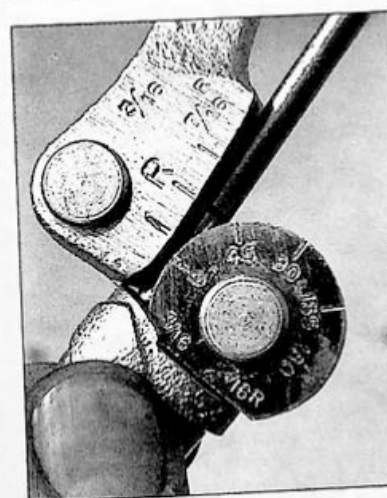
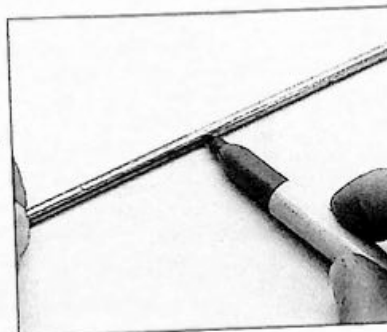
The best method is to start at the master cylinder and bend the line toward the four wheels on the chassis. A dual master cylinder should be used because of the added safety factor. Always determine the front and rear portion of the master cylinder brakes). Creating the many bends needed to get the line around the master cylinder is one of the more difficult tasks, so be patient.

PHOTOGRAPHY: WILL HANDZEL



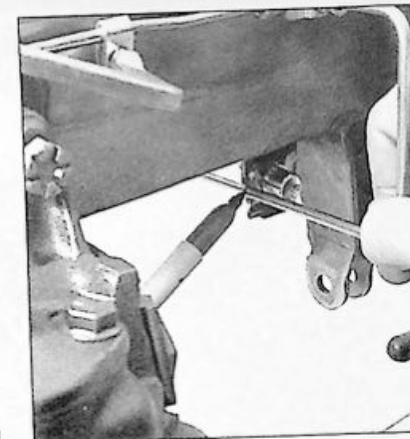
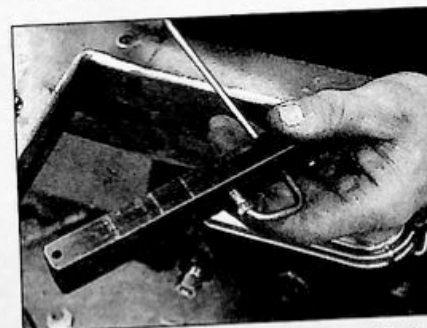
Bending up a piece of welding rod or coat hanger wire is a good way to determine the best route for the brake line. This can save you lots of money by preventing brake line bending mistakes or improperly placed fittings. This method showed us that this T-fitting was too close to the front crossmember, making it impossible to use the flaring tool on the next piece of line because the bend needed to clear the crossmember.

An excellent way to bend the line in the proper direction every time is to use a fine-point felt-tip pen to draw a line lengthwise on the brake line before you start bending. The line gives you a reference point when you are determining which way to bend the hard line.

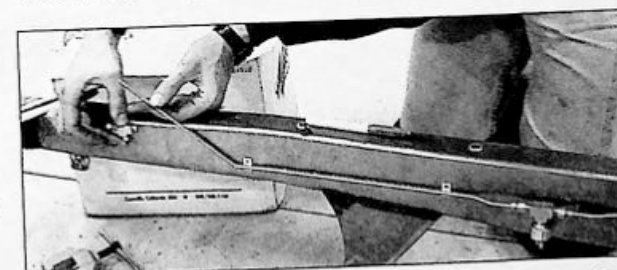
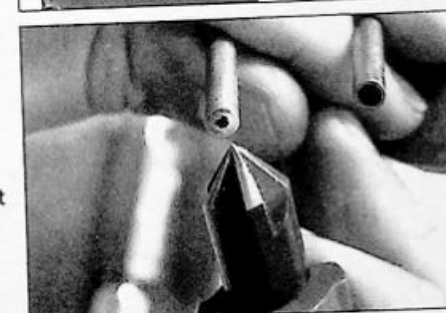
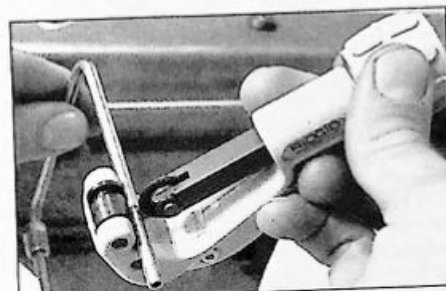


With the welding wire template, determine the center of the bend and mark it on the hard line. The tubing bender has a line on it marked "R," for the centerpoint of a 90-degree bend, so you can pinpoint the bend every time. Always put the lengthwise reference line down the center of the first bend. If the hard line needs to go one way or the other, you can bend the tubing off the line on the following bends.

Always make sure the first or last bend is not too close to the end of the brake line so you can get the flaring tool and the fitting on the line. For some tools, you will need almost 1 1/2 inches from the end of the line to the bend to get the flare on the line! It's important to use a 37-degree single-flaring tool on stainless-steel brake line and a 45-degree double-flaring tool on mild-steel line.



The cutting tool and reamer provided in the Ridge Tool kit make cutting the brake line easy. To gently cut the tube, the cutter should be tightened about one-quarter turn or until resistance is felt after each rotation. Once the tube is cut, the reamer is used to clean up the end so it can be flared properly. The tube on the right is ready to be flared.



Probably the hardest part of plumbing brake line is determining where the hard line should be placed. Stay clear of brackets that mount other components and areas where suspension pieces, the exhaust or other hot or moving components might come in contact with the hard line. Of all the systems on a car, the brake system must work—even if everything else fails—so take your time to ensure everything is right with your brake line. Not having to worry about the brakes when you're driving the car will be reward enough for all the time spent getting them right. **KC**

### SOURCES

**Total Cost Involved, Inc.**  
Dept. KC  
1416 W. Brooks St  
Ontario, CA 91762  
909/984-1773

**Ridge Tool Co.**  
Dept. KC  
400 Clark St.  
Elyria, OH 44036  
216/323-5581

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# Pipe Dreams

By Steve Temple

Sure they're loud, they're bulky and they can singe the hair on your legs, but no self-respecting Cobra enthusiast would be without a set of side pipes. And you certainly wouldn't want them to scrape on the ground or point at a weird angle—those pipes are a Cobra's calling card, and they've got to look right or they'll ruin the whole effect.

Phil Piazza, production manager for Contemporary Classic's turn-key Co-

bras, gave us a few suggestions for correctly installing side pipes. First, level the chassis from front to rear and from side to side and make sure the body is centered on the frame. After the engine and transmission have been installed, loosely attach all the primary exhaust pipes. Next, use a jackstand to test-fit the approximate mounting location of the side pipes (Figure 1). (The openings in Contemporary's fiberglass body come already cut but with a tight fit.)

Remove the pipe and slightly en-

large the fiberglass opening in the body, just enough to clear the pipe. Install the side pipes and adjust and tighten them to the final mounting position. Check the levelness of the side pipe with a bubble level (circled) and by measuring up from the floor at both ends (Figure 1). Place shims under the pipe to fine-tune the angle. Mark the body according to the measurements in Figure 1, remove the pipes and trim the body. To allow for the engine torquing on its mounts, provide 1½ inches of clearance between the pipes and the top of the body opening. Otherwise, a ¾-inch clearance is sufficient on the other sides.

Line the opening with a rag to protect the fiberglass edges during fitting, and then hook up the side pipes again and weld the retaining tabs (Figure 2). (The bottom tab should be installed closer to the rear of the car.) After you drill through the side pipe's mounting bracket, the chassis and the body (Figure 3), install the mounting hardware and the spacer tube (Figure 4). Now your pipes are ready to make some music.

Figure 1

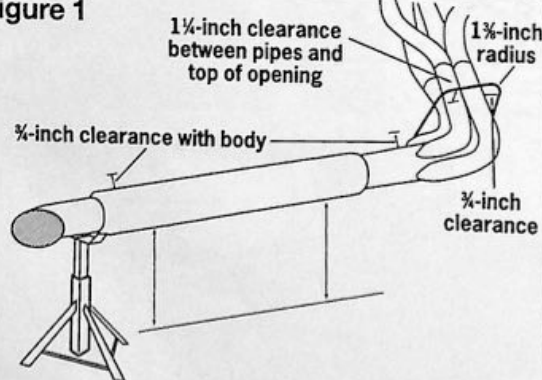
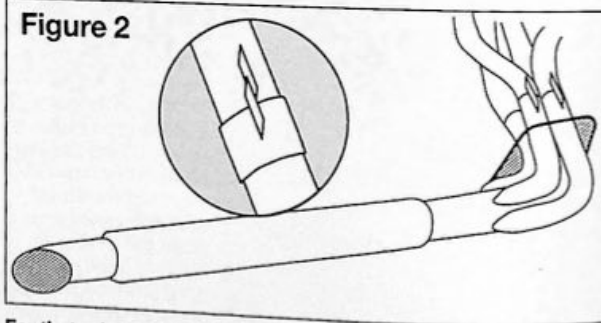


Figure 2



For that original-style look, and to simplify removal of the pipes, weld on retaining tabs with the lower one behind the upper one.

Figure 3

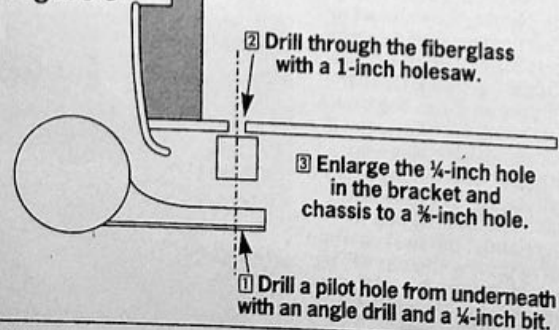
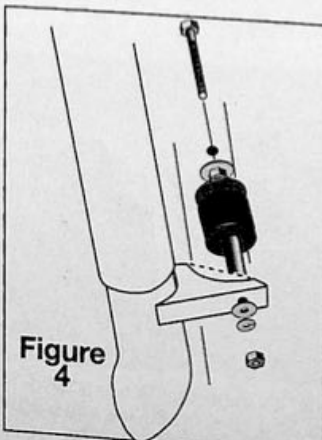


Figure 4



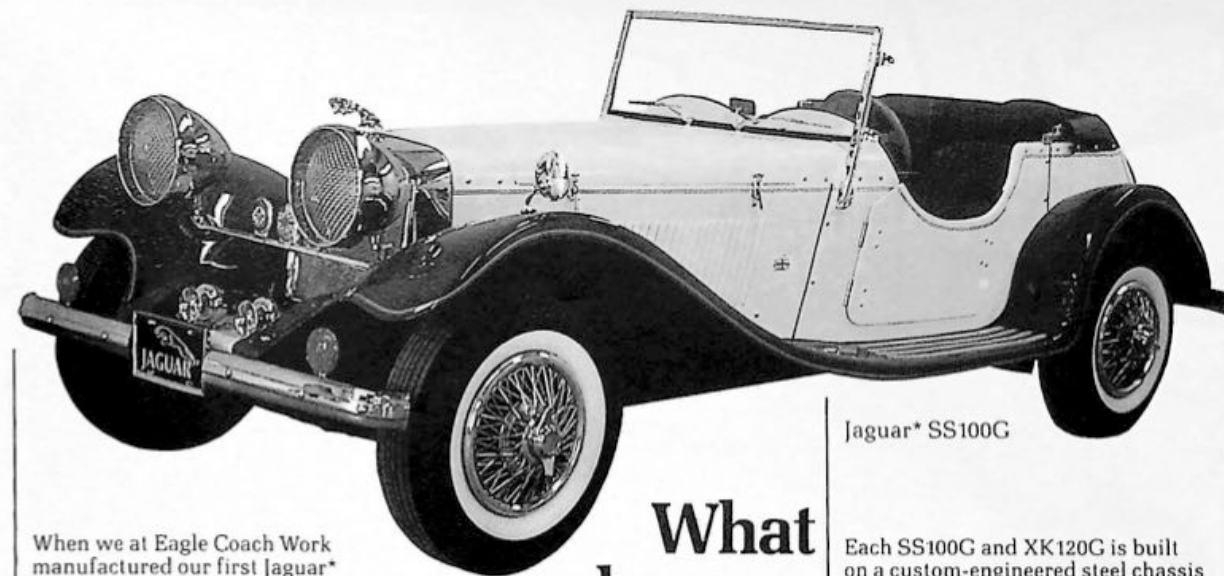
The hanger bracket (shown here from underneath) should have a spacer tube and a rubber bushing from a sway bar link to cushion the mount. **KC**

## SOURCE

Contemporary Classic Motor Car Co.  
Dept. KC  
115 Hoyt Ave.  
Mamaroneck, NY 10543  
914/381-5678

PHOTOGRAPHY: STEVE TEMPLE

ILLUSTRATIONS: JOHN W. MORGAN



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By Jim Youngs

The similarities between a certain slithery coupe and the replica reptile shown here go deeper than scaly skin. The original was shrouded in mystery before its Daytona debut, and likewise, this look-alike cautiously lurks in a clandestine skunk works lab. Well, it's not really in a high-tech R&D facility, but even a disguised body shop will do. Such secrecy is understandable, considering this coupe kit copies a car on which the paint is barely dry. Stealth efforts of our own were required to grab these spy shots of a replica project that has yet to emerge from its dark den. We just had to show you what's

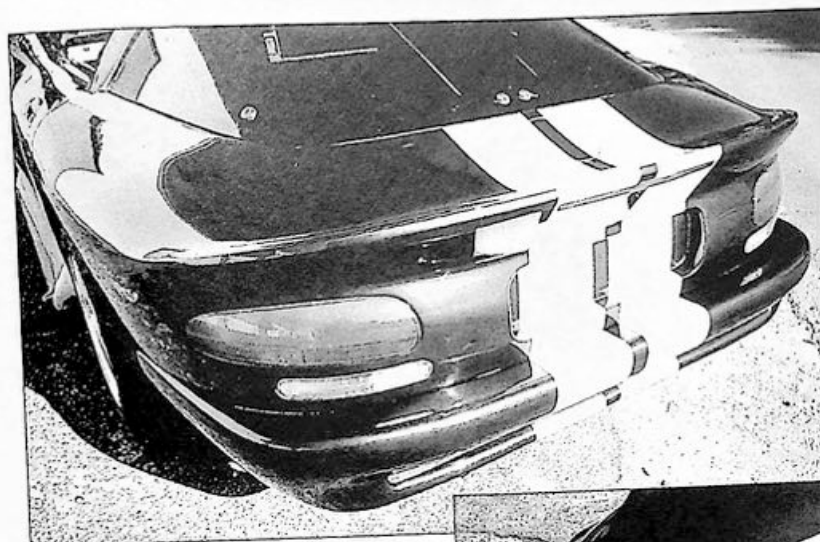
## There's a Strong Family Likeness, but the DNA Is a Bit Different

possible in the world of kit legerdemain, even if tracking down the source proves to be a bit of a challenge for our readers. Of course, we could reveal the source—but then we'd have to kill you.

The reluctant entrepreneurs who styled and shaped this fiberglass

body by hand designed it to fit '84 and newer Corvettes. The anonymous and unnamed rebody kit differs from the Viper GTS Coupe in several aspects (yet so did a similar project we featured previously on a T-top Corvette, and the bloodlines were still unmistakable). The rear glass is clearly from a Corvette, but creating a more exact copy would be easy with some sail panels and a big flip-top gas cap. To keep things simple, and also to allow the option of an open-air cockpit, this coupe kit's double-bubble hardtop lifts off, giving the driver a change of attitude and a wind-in-the-hair experience.

Prior to affixing the new body, most of the donor car's body panels must be re-

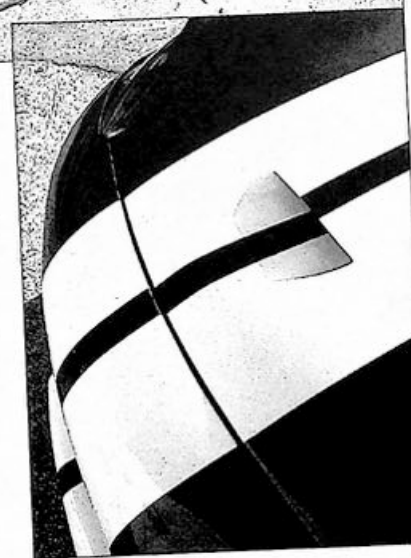


moved. These panels can be sold to help with the financing of the project. The interior, engine, exhaust, emissions gear, transmission, suspension, gas tank and fuel filler all stay in place. Although the integral side pipes in the rocker panels are not operational, they could be hooked up with some custom exhaust tubing. The finished vehicle is evidence that simplicity was the name of the game in creating this coupe kit.

The fiberglass components of the new body include front and rear bumpers, front and rear clips, door skins and T-top skin. You can probably figure out where to get the headlights and taillights. The kit's manufacturer made mounting the fiberglass parts easier by using the donor car's structure for alignment. For example, the rear clip's contours line up exactly with the doorsill shapes. Once you bolt or rivet the parts in place, you can fill any remaining gaps to make a seamless finish between the glass panels and the Corvette parts. The fiberglass work on this coupe is impressively straight, true and solid. The front clip is a huge single piece which hinges forward smoothly on the 'Vette's factory mechanism and closes just as easily.

Normally you must use wheel spacers to achieve the proper footprint and fill up the wider wheelwells. The car in our spy photos, however, is wearing deep-dish Billet Specialties polished aluminum wheels with low-profile tires, so spacers are not necessary. Note that using wide wheel spacers can change the geometry and relationship of the wheel to the axle. The spacers must be aligned properly to prevent weird handling and accelerated tire wear.

In keeping with the looks of this coupe kit, the donor car is up to the



task of providing a level of performance that won't embarrass you at stoplights. Many aftermarket performance goodies are available for the 'Vette.

We discovered this coupe kit project in its infancy, and the company has yet to settle on a retail price. Preliminary projections suggest a price of about \$6500 for all the fiberglass components, with such items as door handles, brackets and wheel spacers available as options. That price doesn't include the cost of body prep and paint, or a possibly expensive Corvette donor car, but consider what the actual coupe costs. That's reason enough to convert a Corvette into a replica reptile. **KC**

### SOURCE (well, sort of)

Vetper, Inc.  
Dept. KC  
3040 NE 190th St., No. 317  
Aventura, FL 33180  
305/796-0265



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PHOTOGRAPHY: JIM YOUNGS





## This Velo Rossa Has European Looks, Japanese Engineering and the Heartbeat of America

By Steve Temple



**Q**uestion: What staple from the Land of the Rising Sun has Italian dressing on it and is fortified with American iron? Well, let's see... No, it's not Sizzler's new international buffet. It's a Datsun Z-car powered

by a Chevy V8 and restyled with a Velo Rossa body kit from V.R. Engineering. Z-cars have been world-class-favorite sports cars since the 240 was introduced in the early '70s, but they have two shortcomings: insufficient power and soft sheetmetal. The latter drawback is actually a plus for kit enthusiasts, because that means damaged donor cars



# INTERNATIONAL Flavors

PHOTOGRAPHY: STEVE TEMPLE & GREG FISHER



For a Chevy V8 swap, Greg Fisher had to take the engine in and out three times before final fit was established. The tilt bar on the cherry picker is essential for a one-man installation.



Fisher welded in the frame reinforcements before slicing off the roof. After he determined the proper angles with wooden 1x4s, he cut steel tubing with an electric saber saw to match, resulting in little waste and a snug fit. A wire feed welder worked best since much of the welding was done to thin sheetmetal.

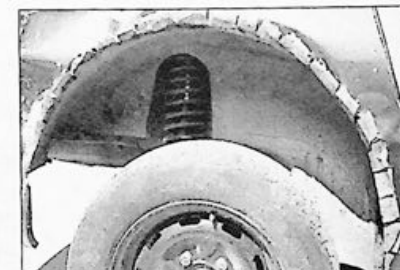
are cheap and plentiful.

Greg Fisher, for instance, bought a Z-car for \$500 and sold the engine for \$450 and the front clip for \$150. You can do the math. As for the lack of power, he handled a V8 swap simply by following the instructions in the *Datsun Z V-8 Conversion Manual* from Jaguars That Run. First, though, he had to sweet-talk his grandmother into letting him pull the 327 block out of her '65 Impala. ("He's such a dear, and how could I spoil his fun?") To make sure he would have a whole lotta fun in his Velo Rossa, he bolted on an Edelbrock Performer intake, a 750cfm Holley and a Rams Head manifold (modified to clear the steering mechanism). Fisher then went fishing at the salvage yard for some other items, such as Opel GT taillights, a VW Beetle trunk latch, Mazda RX-7 trunk hinges, a Camaro radiator and a Corvette transmission. He also had to custom-fabricate the engine mounts.

So as not to mar the final finish, Fisher made sure the mechanicals fit right before proceeding with cosmetic surgery to install the \$3900 convert-



When chopping the top, wear safety goggles and be sure to brace the roof with a slight amount of upward pressure to prevent binding of the cutting wheel.



Fisher flared out the rear wheelwells to allow the big 10-inch-wide tires to fit. He made many cuts around the edge, then he bent up the pieces and welded them to the fender. Later, he installed sheet-metal wheelwell liners.



Fisher sandblasted the frame to remove two layers of old paint. Then he used a welder to fill in rust holes before finishing with body putty.

ible body kit. The Velo Rossa is available in a coupe version as well, which is a more accurate replica of the '62 Ferrari GTO (a drop-top model was never available in the original item but probably should have been, judging from the lines). Fisher fitted wooden 1x4s on the frame as templates before fabricating and welding in the tubular-steel reinforcements on the rocker panels and rear shock towers. Then he cut off the roof.

To affix the fiberglass panels, he bolted everything in place before applying aircraft-grade epoxy adhesive to the abraded sheetmetal. He had already modified one of the panels so he could use a LeMans gas cap. Once the bodywork was installed and smoothed, Fisher sprayed on Ferrari Red (what else?). Even after three years of weekend work, Fisher still has a few items left to do here and



To test-fit the kit on the car, Fisher held the panels in place with masking tape. This is when he decided what his installation strategy would be. He chose to start at the back and move forward, installing the rear tub first, and then adding the door panels, the cheek panels and finally the clamshell hood. He bolted all the pieces into place before permanently bonding them to the frame. Always grind down to the metal before epoxying the panels into place, then thoroughly clean the fiberglass. Fisher attached the rear tub with epoxy mixed to the consistency of putty, so the bonding agent would not run after the panel was screwed in place. He removed the doors from the car, then used aircraft-grade epoxy to join them to skins that were lying flat on a bench.



Some grinding and smoothing with fiberglass-and-body filler was necessary before Fisher sprayed on primer, followed by a guide coat. After final blocksanding, the body was ready for the color coats. To avoid problems with overspray, Fisher applied the color coats in two stages. He did the interior first with a small touch-up gun and the exterior masked off. Next, he masked off the interior and painted and color-sanded the rest of the body.

there (we're familiar with these never-ending projects), but he's still having fun. Just don't let him near your grandmother's Impala. **KC**

### SOURCES

Jaguars That Run  
Dept. KC  
P.O. Box 66

Livermore, CA 94551  
510/462-3619

510/846-3642 (fax)

*Datsun Z V-8 Conversion Manual*,  
\$33.95 plus applicable tax  
and \$4 shipping

V.R. Engineering

Dept. KC

2149 E. 5th St., No. 103

Tempe, AZ 85281

602/903-3625

info package w/ poster: \$5



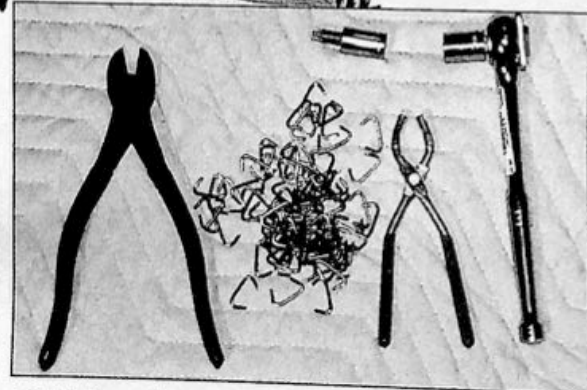
## How to Freshen Your Fiero's Furniture

By Steve Temple

**W**hen you go scrounging for a Fiero for a rebody project, it's a good idea to buy a dog-eared donor car. If it isn't a little rough around the edges, you'll probably end up paying

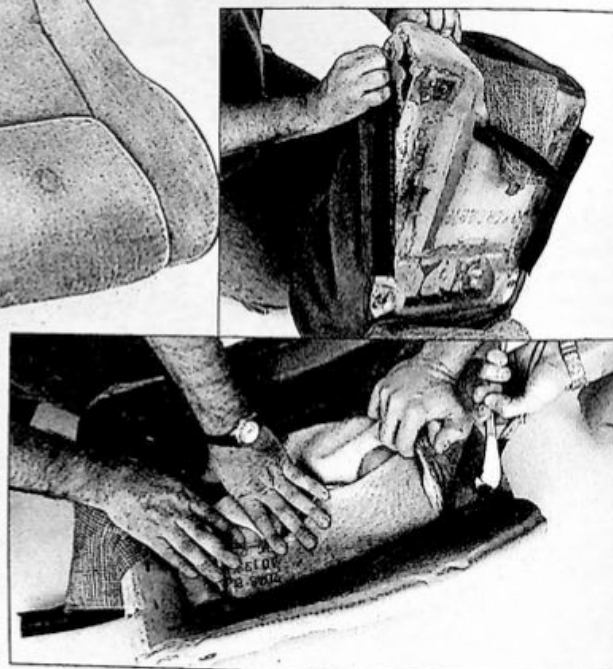
# Cover Me

too much for something you plan to tear apart anyway. Besides, it's a lot less painful to operate on a clapped-out Pontiac than to start slicing into a perfectly good one. If you follow this bit of advice, your donor's seats will probably look just as funky as the body. Instead of simply slipping some cheap sheepskin rugs over those beat-up old buckets, give your cockpit an upscale look with PISA's new leather seat covers, priced at \$425. As you can see here, it's really easy to remove the frayed factory fabric and snug on the new skins. Also, PISA has a number of other Fiero conversion products, including dashboard treatments, so you can make your Pontiac project look new both inside and out.

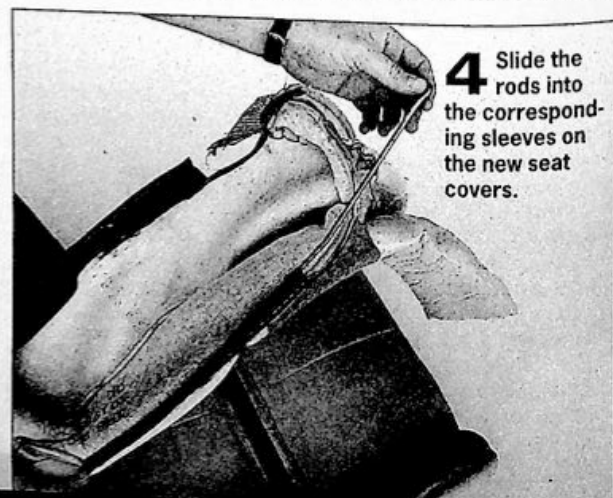


**1** You'll need to use the following tools and supplies (left to right): wire cutters, hog rings, a hog ring tool, and a 13mm socket wrench with a Torx bit. The hog ring tool and hog rings are included in the upholstery kit.

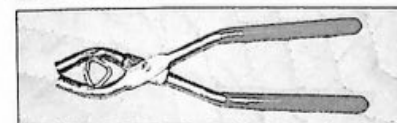
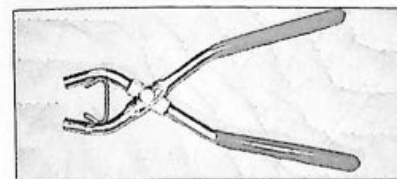
**2** Use the socket wrench to unbolt the seat from the tracks and the Torx bit to separate the back section from the bottom piece. Turn the bottom piece upside down and cut the hog rings that hold the old upholstery in place. (If you're not sure how to use a hog ring tool, practice by replacing the first few rings you remove—see Step 5.)



**3** Roll back the corners of the old seat cover and flip the bottom over to expose the metal rods. Cut the hog rings holding the rods (don't cut the rod, because you'll need it later). Pull the rod out of the sleeve sewn into the old seat cover.



**4** Slide the rods into the corresponding sleeves on the new seat covers.

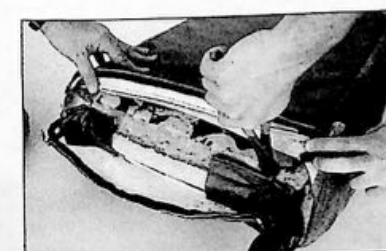


**5** Use the hog ring tool to refasten the rods at the hooked ends. This tool simply compresses the ring around the items to be joined.

**6** Pull the new cover over the corners of the foam, and be sure to line up the Velcro strips. Spray the foam with soapy water for easier installation. Massage the cover to make sure the seams are straight.



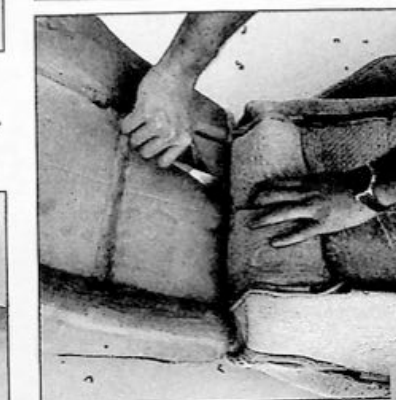
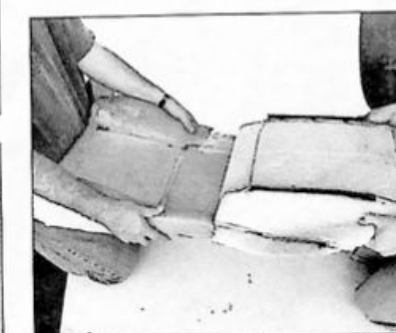
**7** Turn the seat bottom upside down and install the hog rings in their previous locations. Make sure the cover is snug.



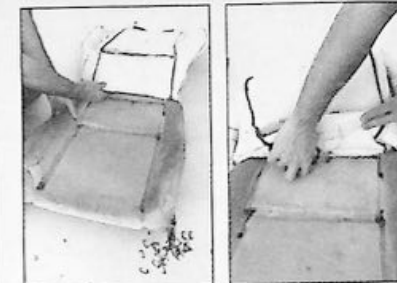
**8** Covering the seatback is slightly different than covering the bottom. Unzip the cover and cut the exposed hog rings on the lower end of the seatback.



**9** Roll up the old cover a few inches to expose the hog rings holding the lower ends of the rods in place. Cut these rings and then note how the upper ends of the rods fit underneath a horizontal wire embedded in the foam at the base of the headrest. You will have to slip the rod back under this wire later on.



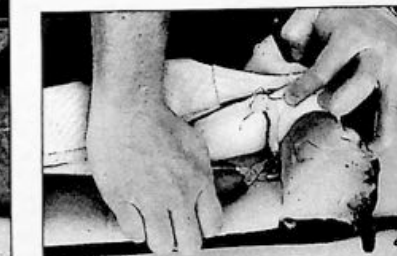
**10** Pull the cover off until you see where it is hog-ringed to a wire inside the foam just below the headrest. Cut these rings and remove the old cover.



**11** Turn the new cover inside out and slip it over the headrest only. Insert a metal rod (clothes-hanger wire will work) into the horizontal sleeve at the front seam of the headrest section of the cover. Use four hog rings to secure the rod to the wire embedded in the foam. (Be careful not to pierce the cover.)



**12** Pull the seat cover completely over the seatback. Slide the vertical rods through the sleeves in the cover and under the wire in the foam at the upper end.



**SOURCE**  
PISA Corp.  
Dept. KC  
P.O. Box 15088  
Phoenix, AZ 85060  
602/376-1550

**13** Use hog rings to reattach the hooked ends of the rods, then zip the cover shut before re-installing the seats in your Fiero. **KC**

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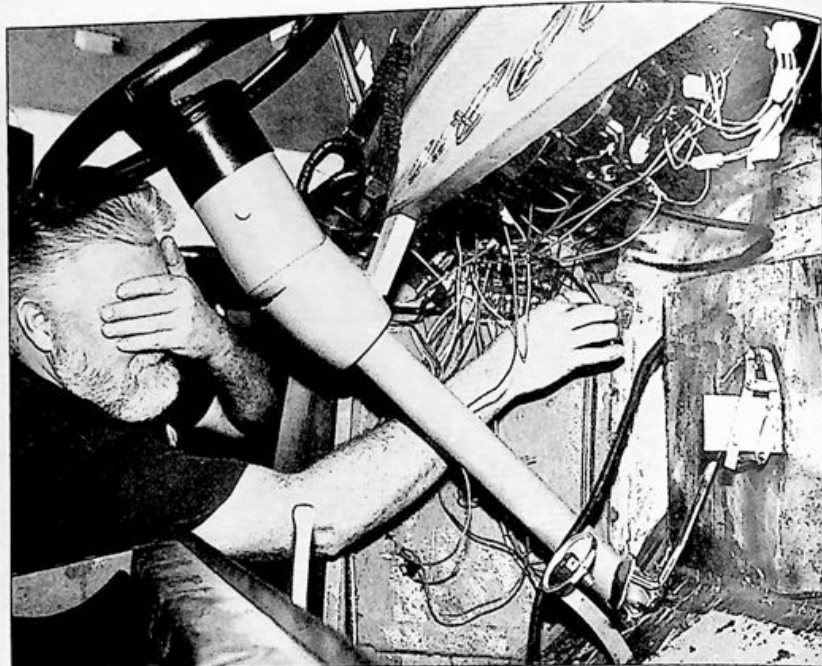


## The Basics of Wiring Your Project Car

By Will Handzel

This is a classic scenario: Joe S. Carbuilder takes his budget kit down to the local wiring guy to have a new wiring harness installed, and the quote is for 40 hours of labor! After catching his breath, all our pal Joe can think is, what could possibly take so long? The truth is that nice wiring jobs, the kind that help a car run all day and look good sitting still, take time.

Even if Joe started with one of the fine kits on the market today, such as the Painless Wiring kit shown here, he would find that the job takes at least 40 hours. It takes a lot of work to install a wiring harness, work that most people never see. Details such as where the fuse block is placed in the car, how it's mounted, how the wires are run and



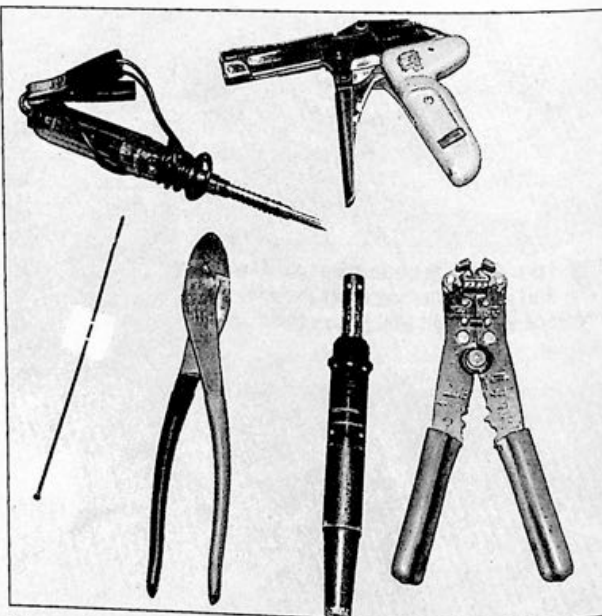
Ooooohweeeee Batman! A bad wiring job is not only scary-looking, it's downright dangerous. With all the complete wiring kits available today, there is no reason to have a wiring job that looks like this. Disconnect the battery and cut this mess out!

# Harnessed!



This project car needed some help, so Painless Wiring's 12-circuit wiring harness (PN 10102, list price \$275) was called into action. The kit comes complete with a fuse block, prebundled wire, plenty of wire ties and connectors, and more.

32 KIT CAR



You must provide the tools to complete the job. Clockwise from the top left are a test light, a zip-tie cutter, a wire stripper, a butane torch for shrink tubing, a solderless-connector crimper and a wire anchor. All these tools are available at electrical outlet stores, each in the \$20-\$30 range.

PHOTOGRAPHY: WILL HANDZEL

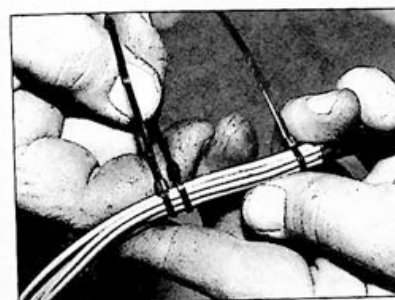
how the connectors are installed all contribute to how the final product looks and works. To show you all this and more, we went to Fred's Wiring in Ontario, California.

### You Want a Quality Wiring Job

While most of the wiring is covered by upholstery or panels, the cleaner it's laid out, the less chance there is of problems showing up later. Even if problems do appear, the chances of finding them are better with a clean installation.

Electrical gremlins are probably one of the most frustrating automotive problems, so the time spent wiring your kit car correctly will keep you on the road, instead of on the side of the road with a flashlight in your hand.

Most builders struggle with where



After the fuse block was mounted, the Painless Wiring bundles were separated into smaller bundles for a cleaner look. Fred's placed a zip tie every 2 or 3 inches and maneuvered the wires into a clean bundle as the job progressed. After the first two zip ties were placed on the bundle, a third zip tie was snugly placed between the first two zip ties, next to the zip tie closest to the loose wires. The zip tie next to the loose ends was then slid down the wire, while the wires were manipulated into a clean package. This was done repeatedly throughout the car, which took time but made a beautiful final product.

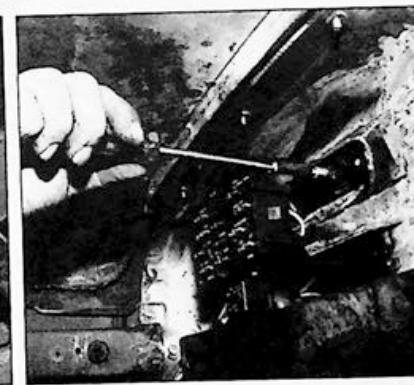
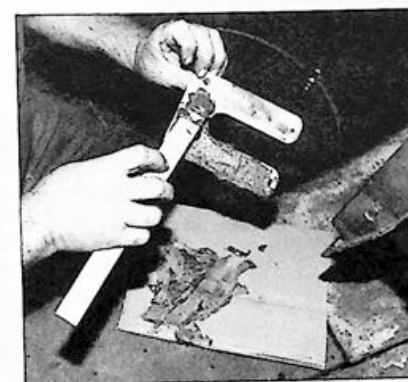


Whenever a wire came out of the bundle, it required some patience to get the bundle to look good at the next zip tie. Notice how this bundle has gone from eight to seven wires and yet still looks clean at the next zip tie. This took some twisting and turning of the wires, but that's what makes the difference.

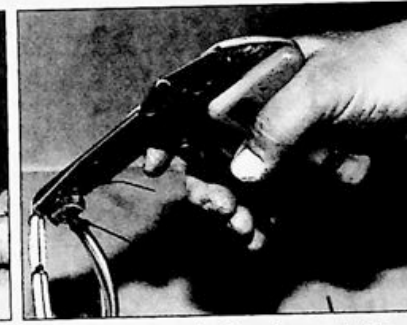
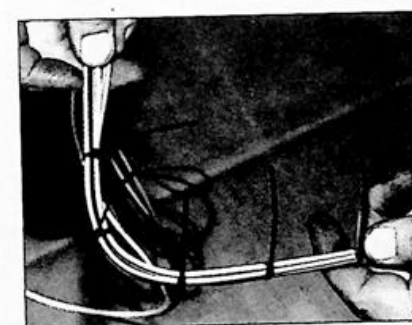
to start wiring a car. If you've never wired a car, it is hard to picture where to place the fuse block. Usually, the best place is under the dash on the firewall. This makes the fuse block easily accessible and simplifies running the wires to the rest of the car. Velcro, fasteners and welded-on brackets are commonly used to mount

the fuse block, but Fred's used fiberglass-reinforced epoxy to glue a fuse-block bracket to the firewall. This eliminates any unsightly holes or welding damage yet provides a permanent mount for the block.

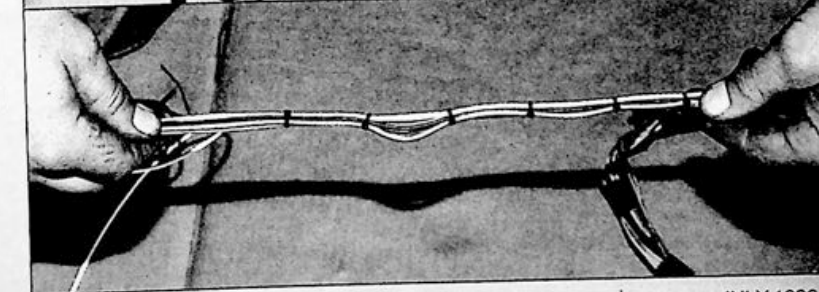
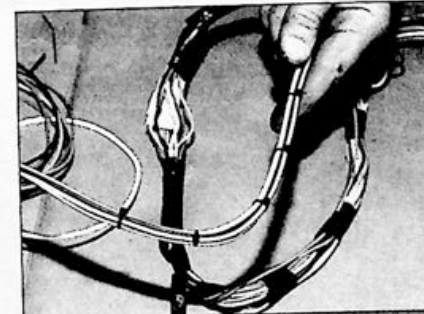
Once the fuse block is mounted, running the wires to their respective areas is the next task. The Painless



Fred's wanted to put the fuse block under the dash on the firewall, so the Painless Wiring-provided fuse-block bracket was modified by welding two threaded bungs to it. Then it was glued to the irregular surface of the firewall with a big glob of fiberglass-reinforced epoxy (Mar Glass). Two little pieces of tape were placed over the back of the threaded bungs so epoxy wouldn't get in the threads. The fuse-block bolt stands were shortened to account for the height of the bungs so everything bolted on the firewall cleanly.



Whenever the wire bundle needed to make a turn, the zip ties were used to "set" the bundle to have it hold any change in direction. The zip ties were placed snug on the bundle, then the turn was bent into the bundle. Then the zip-tie cutting gun was used to tighten and cut the zip ties evenly. The bundle will hold that shape until the zip ties are cut off.



JULY 1996 33



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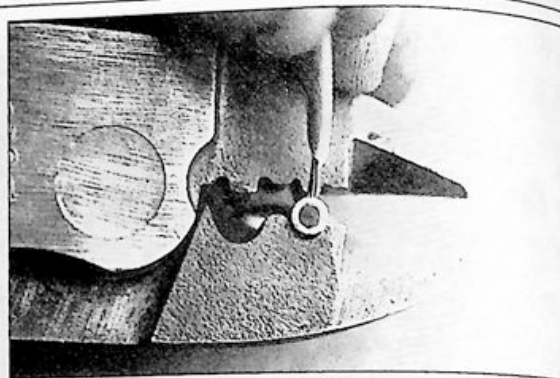
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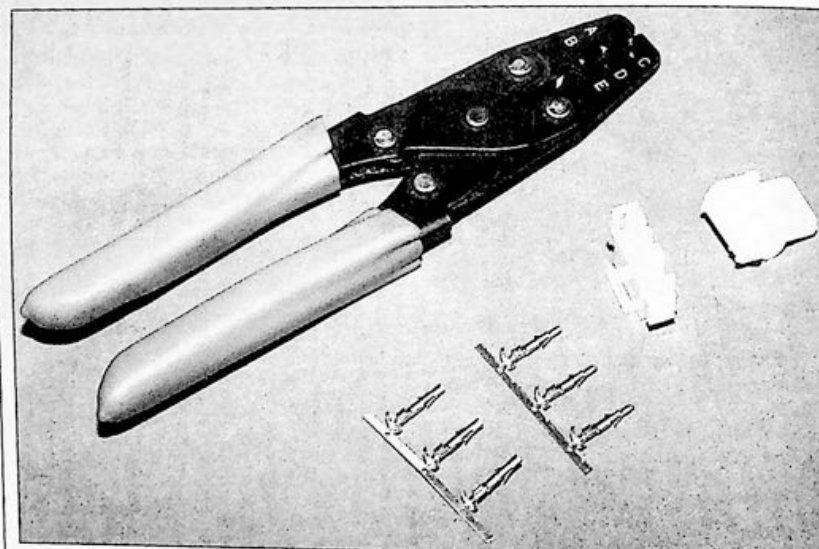
HARNESSED!



Properly crimping on the solderless connectors will help ensure that they stay on forever. Always place the connector in the crimping pliers with the formed ends of the connector in the half-moon portion of the crimper. The cleat of the crimper then clamps the wire in the connector solidly without distorting the connector.

## TRICK CONNECTION

Among the trick stuff that Painless Wiring sells are these O.E.M.-type multipin male and female connectors. If you buy one of the proper crimpers for the connectors, installing them is easy. The trick to crimping these connectors is to cut down the ends of the connector with side cutters. This is done so the connector fits properly in the crimper. If this isn't done, the crimp will be inferior and the wire will eventually come loose. Start with the largest jaws and then crimp in sequence through all the jaws until the crimp is complete.



## SOURCES

Fred's Custom Wiring  
Dept. KC  
1258 W. Holt Ave.  
Ontario, CA 91762  
909/986-2231

Painless Wiring  
Dept. KC  
9505 Santa Paula Dr.  
Fort Worth, TX 76116-5929  
800/423-9696

Wiring kit comes with the wires pre-bundled, but Fred's recommended using bundles of eight wires or less, so some of the bundles were redone to reduce the number of wires.

The wires were located in the car to minimize their exposure to extreme heat and wear, both of which could cause a short. Fred's also used small adhesive-backed wire anchors for holding wires to vertical surfaces. The adhesive was scraped off and epoxy was used to mount the anchors permanently. These pieces are available at electrical supply houses for less than a dollar each. As the wiring was placed in the car, zip ties were used every few inches to hold the wires neatly together. Fred's used a zip-tie gun to get even tension and clean cuts on all the ties. The gun is a \$25 tool that will get a lot of use once you realize how nice the results look with wire ties.

All the wiring bundles were run through the car to their proper locations before any cutting and crimping started. This step was taken because it was inevitable that some wires would have to be rerouted around obstacles that arose during the job. Always make sure everything is in its place before cutting, since this will prevent the dreaded splicing of wire later.

After all the bundles were positioned, the wires were cut to length and the Painless Wiring-provided solderless ends crimped on. Having a quality crimping tool makes all the difference when putting solderless ends on wire. If you have cheap clamshell-jawed crimping pliers, toss them and spend \$25 to get the proper half-moon-and-cleat crimping pliers shown here. The wire strippers you see here cost another \$25, but like all good tools, once you spend the bucks and use them, you'll never think about the cost again.

For a super-clean look, use shrink tubing over the connector and wire mating point. Fred's used solderless connectors without the plastic cover, so all the ends have shrink tubing on them, but it works just as well on the plastic-covered ends.

Finally, a test light is critical to fine-tune the entire system after you think you have finished.

Electricity is quite simple: It flows from positive to negative, leaks at the point of least resistance (a short) and makes nice stuff look and smell bad when it shorts. Therefore, you need to work smarter than electricity (which shouldn't be that hard) and make your wiring system as clean and efficient as possible to avoid these problems. All that takes is time and knowledge, both of which you now have! **KC**

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# LOW-FLYING FIERO



## Improving Your Pontiac's Posture With Performance Underpinnings

By Harold Pace

Many of today's most interesting and affordable rebody kits are based on the late, lamented Pontiac Fiero. Not an overwhelming marketplace success, the Fiero

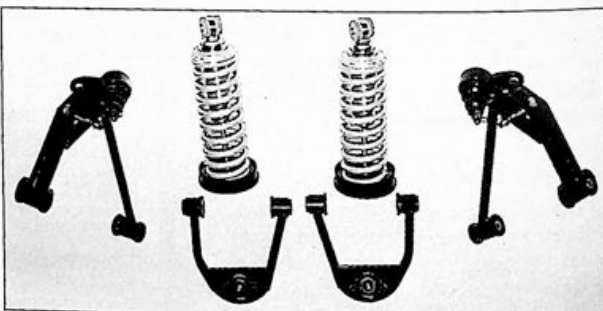
nonetheless sold in sufficient quantities, so now kit builders can purchase them at rock-bottom prices for repainting projects. In the interests of keeping the price down, though, Pontiac didn't spend much money on the suspension and brake components until the '88 model—unfortunately the last year of production. Although robust and adequate for everyday use, the pre-'88 Fiero suspension doesn't have the high-performance adjustable design to match the sporty bodywork installed by kit builders nowadays.

The people at RCC Specialty Products saw an opportunity to use their race-car-fabrication skills to make the Fiero more controllable. Chief engineer Warren Webster has designed a variety of products, including front and rear suspension kits and two larger-brake options. The front suspension received a lot of attention, starting with the shocks and springs. The stock items were replaced with Carrera

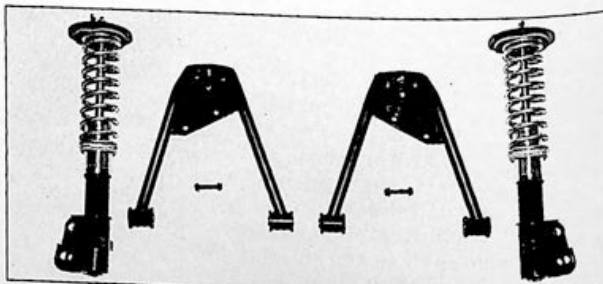
coil-over shocks with AVO springs (chrome springs are extra). These can be adjusted to lower the car 2 inches from stock (often a necessity to achieve the right stance with certain body conversions), which also lowers the roll center for improved handling. A variety of spring rates are available to help you tune your car to your personal

preference or to compensate for a stretch job or engine swap.

The lower front control arm was replaced with a tubular arm designed for the coil-over installation. Although you can use the stock Fiero upper control arms, it is better to add RCC tubular upper arms because they are lighter and have polyurethane bushings at all frame pivots for more precise handling (the arms simply look better too). For maximum camber adjustment, RCC units feature aftermarket slotted upper ball joints.



The standard front suspension kit includes tubular A-arms with polyurethane bushings.



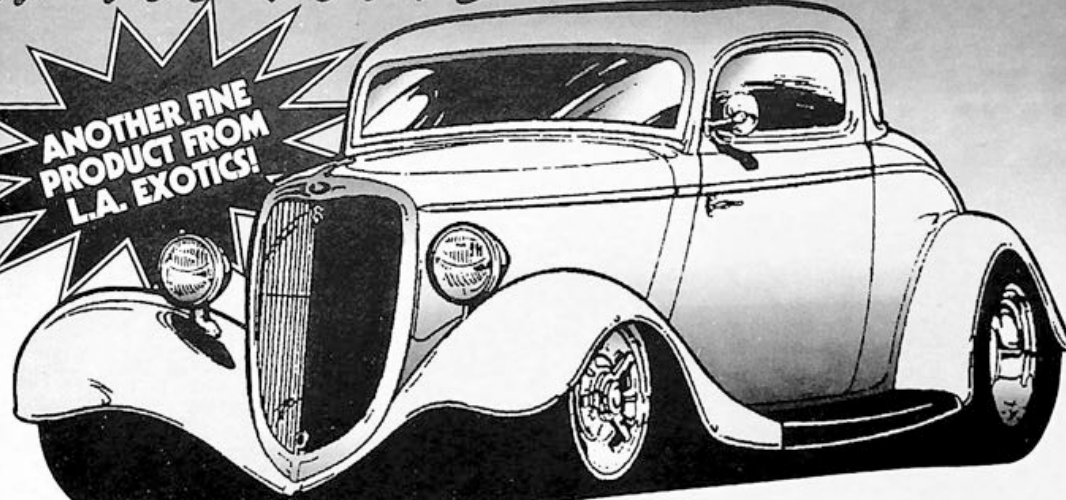
The rear suspension kit also has tubular control arms, along with Carrera coil-overs that can be adjusted for a 2-inch drop.

For easier caster adjustment, RCC's front suspension upgrade is available with an adjustable lower control arm, shown here with the optional 11-inch rotor.

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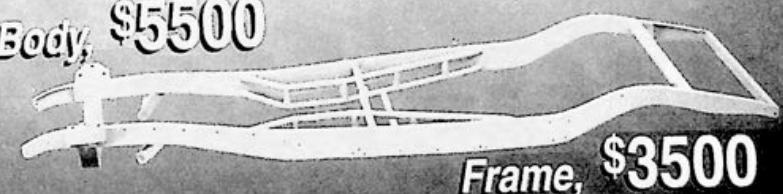
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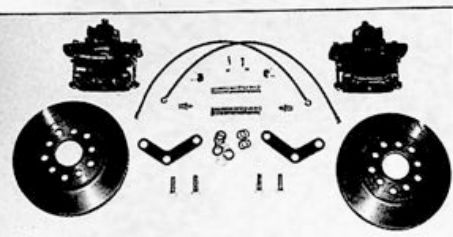
## LOW-FLYING FIERO

The ball-joint mounting plate holes are slotted as well. Lower arms are available in nonadjustable and adjustable configurations, with the latter providing easier and more extensive caster adjustments.

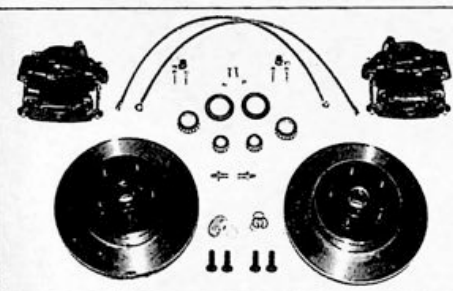
RCC's rear suspension is similar to the front suspension, with stock-style struts modified to take Carrera coil-over springs. They are also adjustable for a 2-inch drop. Tubular control arms replace the stock parts for less weight, better appearance and stronger construction. The price for the front and rear upgrades is \$1780.

After improving the Fiero's road holding, you will need stopping power to match, especially if you raise the power output. Two sizes of brake rotors are available, depending on the size of your wheels. The 11-inch-diam-

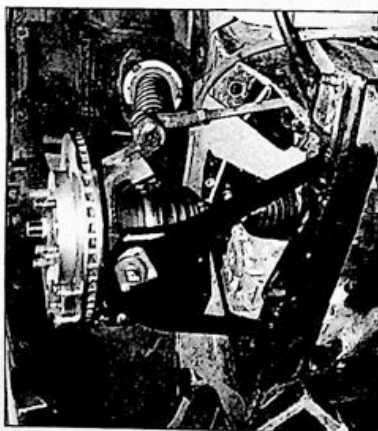
eter brakes will fit inside a few 15-inch wheels, but usually they require 16-inch or larger rims for more clearance. For most 15-inch rims, you will need the 10-inch-rotor package. Both packages include rebuilt GM calipers, vented rotors and all the hardware for installation. The brake lines are replaced with braided stainless-steel units, and the stock Fiero parking brake cable is used. The hubs use the stock Fiero bolt pattern, although other patterns can be supplied at extra cost. The brake swap results in about a 1-inch increase in pedal travel, which a larger-bore master cylinder (available separately) will correct. The complete front and rear brake package (less the master cylinder) is \$1260, and all pieces are available separately.



The rear brake kit includes calipers, rotors, braided brake lines and mounting hardware.

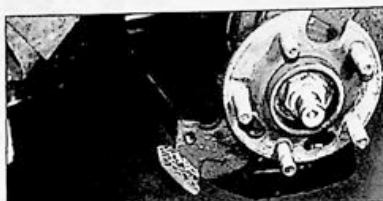


On the 10-inch-front-brake kit, note the custom brackets on the calipers. Special hubs are shown installed in the rotors.

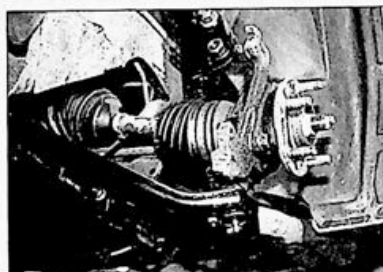


At the rear, start by replacing the stock bottom control arm with the RCC unit. Follow the procedures outlined in the Fiero service manual to remove the stock brakes, strut and spring assembly (be careful with the latter to avoid injury). Remove the spindle from the stock lower arm and attach it to the new arm.

38 KIT CAR



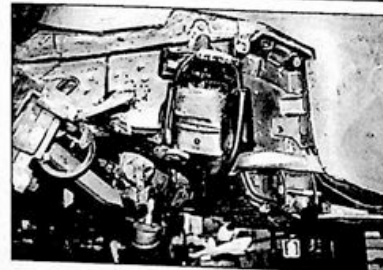
Attach the lower control arm to the frame. Note that this is the nonadjustable lower arm. On adjustable arms, this piece has rod ends that can be screwed in or out for caster adjustment.



For the rear brake kit, the portion of the caliper mounting bracket that extends over the disc must be cut off as shown. After bracket removal, the two 11mm caliper mounting bolts must be reamed out with a 7/16-inch drill bit and tapped to accommodate 12mm bolts (a 12mm tap is included).



Install the upper arm, and then replace the spindle, sway bar and tie-rod end. The front brakes are installed in the same way as the stock units and require no special fabrication. When finished, bleed the brakes and check that all the bolts are tight. Set the camber, caster and toe to supplied specifications or ones of your own choosing. **KC**.



On the front suspension, follow the factory procedures for removing the brakes, shocks, springs and control arms. The cone-shaped metal piece that fits inside the stock spring is spot-welded and must be cut loose with a chisel.

### SOURCES

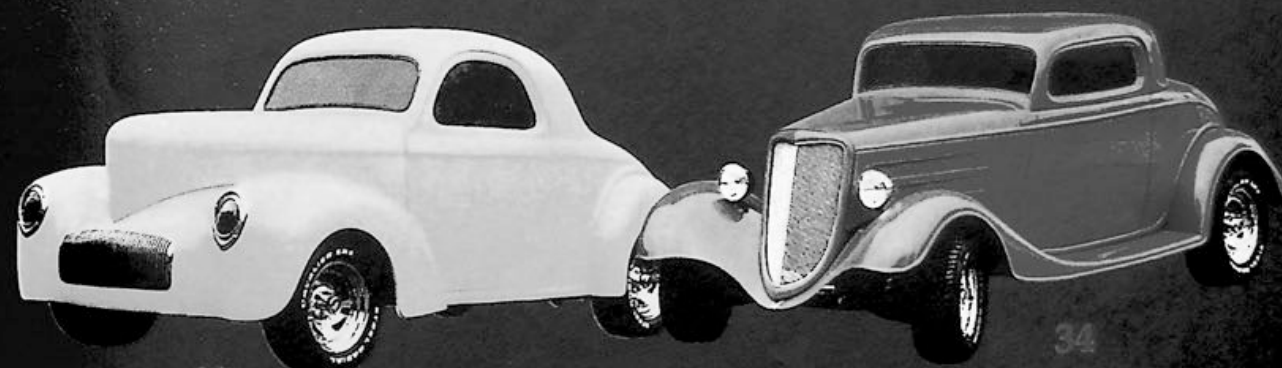
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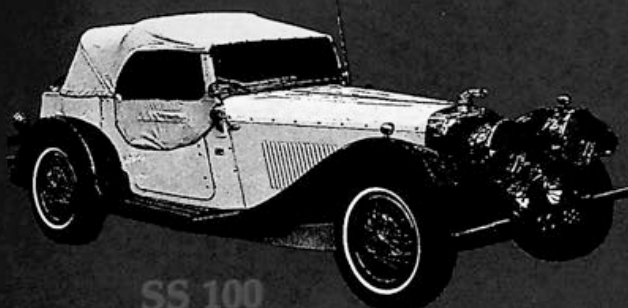


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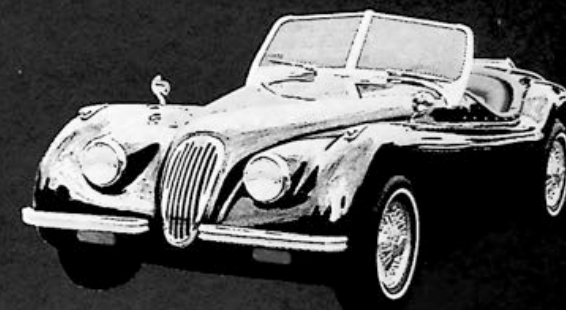
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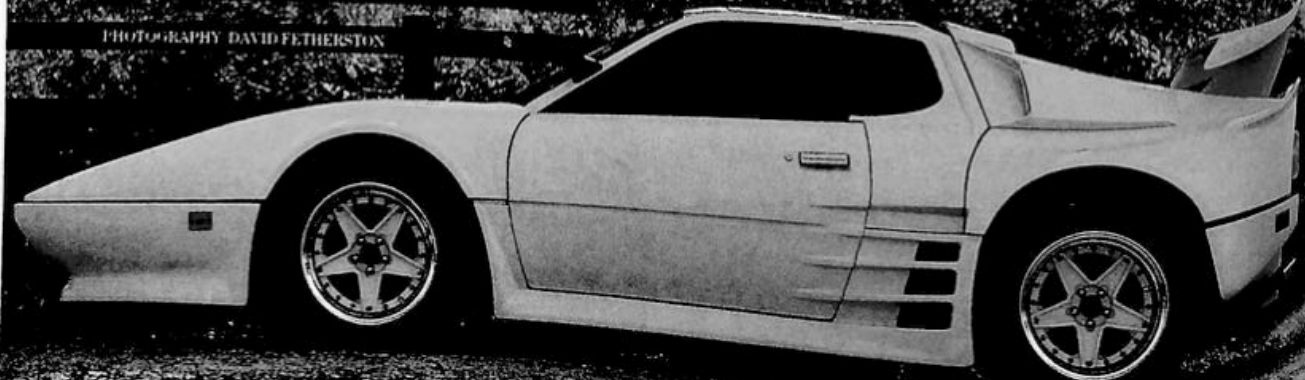
## Aldino's Boxer Replica Is One Spicy Italian Dish



By David Fetherston

While many kits replicate production vehicles, the Aldino K/O was inspired by another body conversion, the Koenig-modified Ferrari 512 Boxer. Koenig Specials of Munich is a famous European restyling firm known for enhancing the lines of BMWs, Jaguars, Porsches, Mercedes, Lamborghinis and Ferraris. Aldino,

PHOTOGRAPHY: DAVID FETHERSTON



on the other hand, prefers to work on Fieros.

The Aldino K/O is a nicely finished kit with a base price of only \$8995 (or \$13,000 on a customer-supplied car). When you lift up the engine cover, you'll find a fully trimmed engine compartment with the original Fiero luggage trunk still in place. There are no rough edges or unfinished spaces. Aldino's Joe Palumbo says he worked carefully to make sure the kit was developed with the correct look for all its detailing and slightly smaller scale. That meant smoothing the doors, rockers, side strakes, and quarter-panel scoops on the side and rear so they all blend together.

Jeff Kruse assembled this particular Aldino K/O kit at his body shop, Customs Unlimited in St. Francis, Wisconsin. He started the buildup by stripping off the skin and the bumpers from his '85 Fiero and installing the Aldino subframes on the front and the rear. These subframes act as base units for the front-tilting hood and the rear-tilting decklid. The car's powertrain remained stock.

The design seems to function and fit rather well, and Kruse is well pleased with his finished car. The 12-piece body kit went on in about 80 hours. He also fitted four new interior pieces, which reformed the dash and used the stock instrument cluster.

Once the body was installed, Kruse primed it with a traditional body shop fiberglass paint preparation before shooting Deltron Ferrari Yellow followed by a clearcoat. Next, he slammed the suspension with Bell Super Tech 3-inch dropped spindles up front and matching lowered springs in the rear. The wheel package uses three-piece 16-inch Compomotive wheels: 8.5-inch fronts and 11-inch rears, shod with oversized Michelin Sport XGT tires.

From any angle, this Aldino serves up some hot stuff. It portrays the feel and power of the original, and Kruse did a fine job assembling the kit. On the car show circuit, his work was also well received when he won a national championship. In addition to this showstopper, Aldino will soon offer a new front-engine, tube-frame convertible version. If it's anything like this Boxer kit, it should be a real knockout. **KC**

### SOURCE

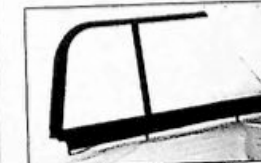
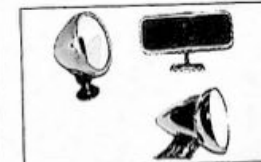
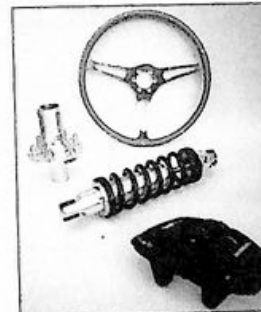
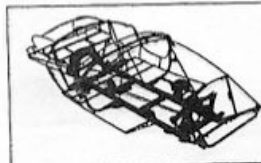
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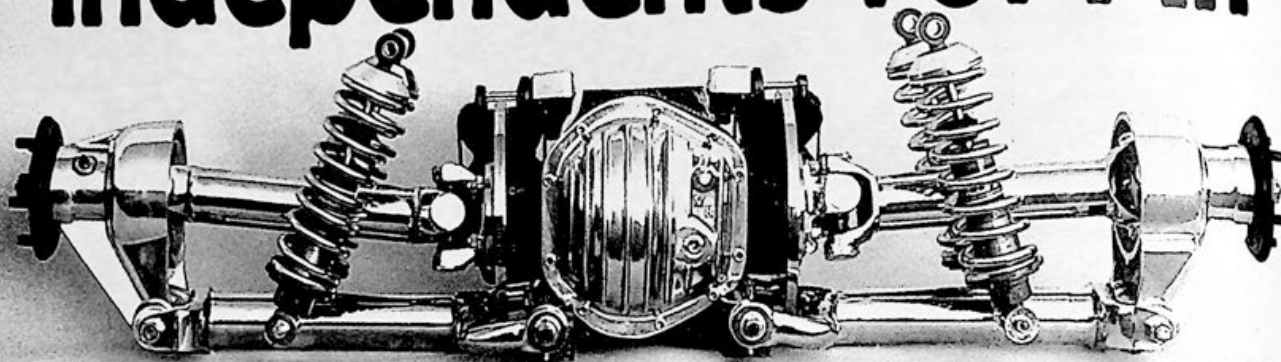
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JULY 1996



# Independents For All

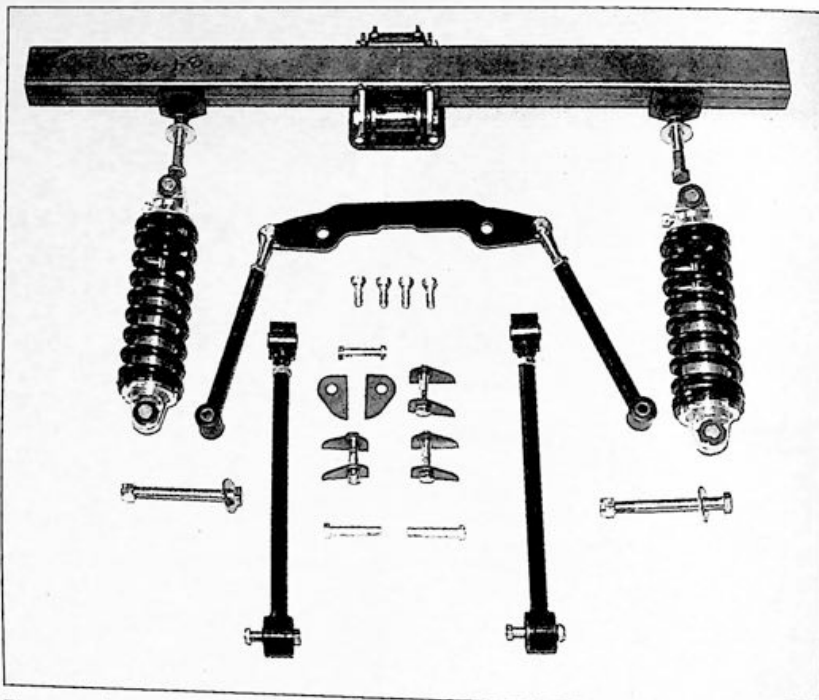


## A New Jaguar Rearend Retrofit for Live-Axle Kit Cars

By Steve Temple  
& Eric Rickman

A great many kit cars use a live-axle setup, usually a Ford 9-inch or sometimes an 8.8-inch unit. From the standpoint of practicality, a live axle is less expensive, easy to install and can handle lots of power. On uneven pavement, however, the independent rear suspension (IRS) supplies better cornering and a more compliant feel, and it sticks better when accelerating out of a turn.

In order to give customers more choices, LA Exotics' new owner Chun Tamm has decided to offer an IRS retrofit. Up until now, his company's Cobra replica and '34 Ford street rods have been available only with a Ford 9-inch. Working in concert with Jaguar suspension specialist Mike Bontoft of Concours West, LA Exotics now can either supply its new kits or refit its older, live-axle cars with the Jaguar IRS. Concours West also plans to make the IRS retrofit available to other makes of live-axle kit cars.

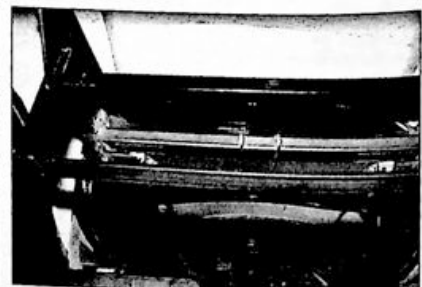


The mounting kit includes a pair of gas-charged, adjustable Aldan Eagle coil-over shocks and all the necessary mounting bolts and bushings.



Determine the location of a 2x3-inch mounting crossmember by temporarily positioning the independent rear suspension (IRS) with jackstands and centering the wheels in the wheel-well openings. Check the angle of the pinion shaft as well. The crossmember fits just behind the frame kick-up. After deter-

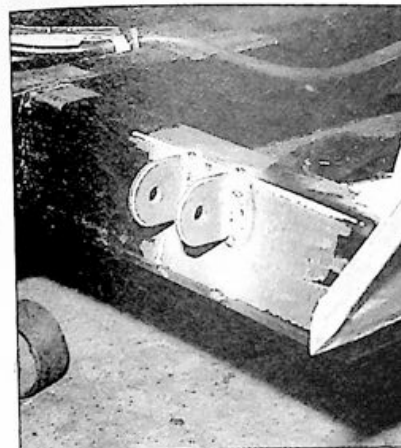
42 KIT CAR



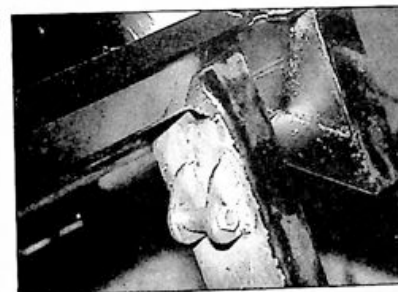
mining the correct position for the IRS, Mike Bontoft welded in the mounting crossmember between the framerrails at all contact points. Proper location of the crossmember may require notching or modifying the frame members, depending on the frame design.

PHOTOGRAPHY: ERIC RICKMAN

The LA Exotics retrofit has been carefully engineered so everything fits with a minimum of hassle. To simplify installation, a separate crossmember

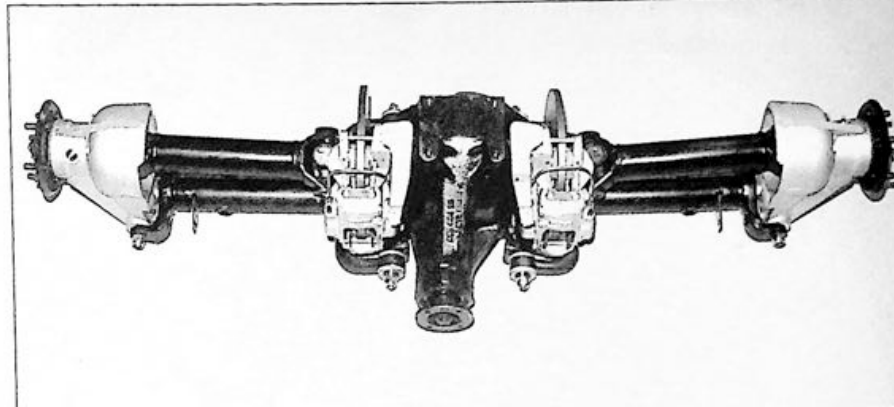


Weld mounting tabs made of 1/4-inch steel plate to the existing outboard crossmember on each side of the frame in order to attach the radius rods. The crossmembers must be stout because a great percentage of the forward thrust of the wheels is transferred to the frame at these points.

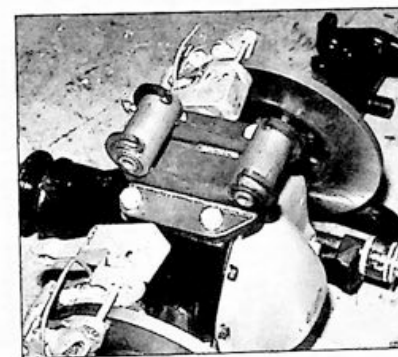


Also weld pinion-support tabs for the differential to the vertical sections of the framerrails.

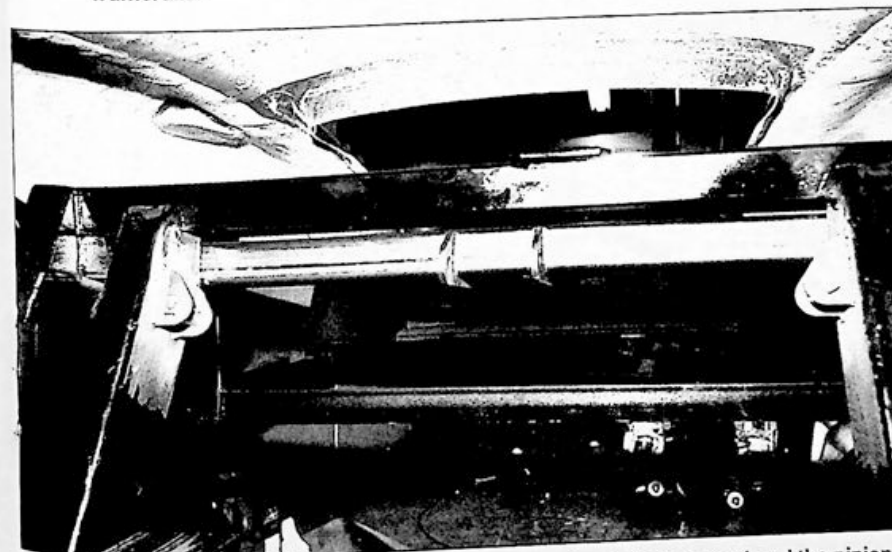
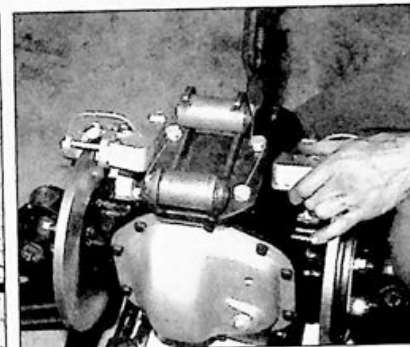
for mounting the center section is provided with the IRS kit. Prior to welding the mounting tabs on the frame, you need to position the rearend tem-



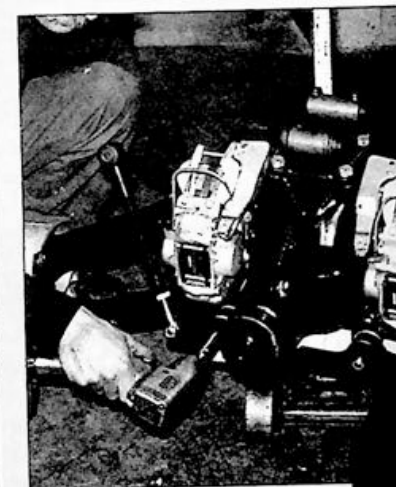
The Jaguar rearend recommended by Bontoft is from the '75-'80 series, with the better brakes and the 3.30:1 ring-and-pinion ratio mounted on a Power-Loc centersection. Concours West rebuilds the differential, and all bearings and U-joints are new. Halfshafts are available in any desired length to provide the proper track width to fit your specific installation. Optional features include a quick-change centersection, additional gear ratios, a Ford 9-inch differential and vented rotors.



Before installing the rearend, bolt an upper mounting bracket to the top of the differential housing and then safety-wire it. Rubber bushings are essential here to prevent the rearend from binding up under hard acceleration.



With the crossmember in place (note mounting brackets in center) and the pinion support tabs welded on, the frame is ready for installation of the Jaguar rearend.



Attach the pinion support assembly before rolling the differential into place under the car. The pinion rods also require vibration-damping rubber bushings.

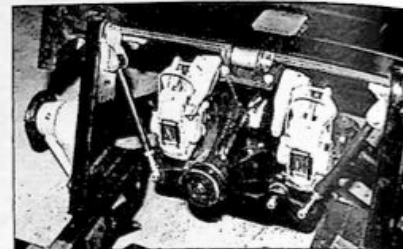
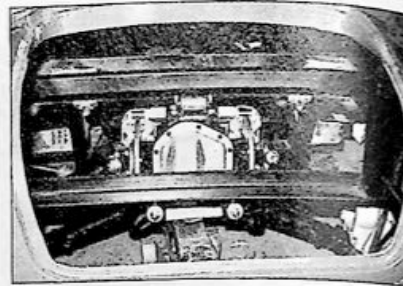
JULY 199



## INDEPENDENTS FOR ALL

Bontoft had already gone through this procedure prior to our photo shoot, so what's shown here is a brief overview of the final steps of installation. As of this writing, the IRS kit sells for \$3400 and includes all the mounting

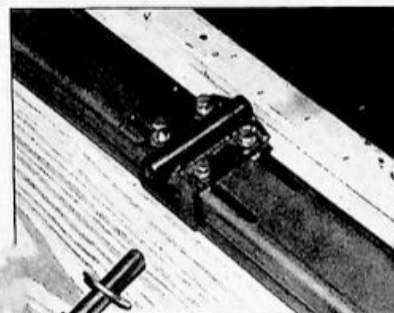
hardware and a reconditioned Jaguar IRS with new coil-over shocks and new bearings. On LA Exotics kits, the IRS upgrade costs \$5000, and the company will retrofit its live-axle cars for \$5500.



With the rearend in proper position, bolt it to the mounting crossmember (top) and attach the pinion-support rods to the frame (above). These rods are adjustable at the lower ends to provide exact alignment and minor adjustment of the pinion-shaft angle.



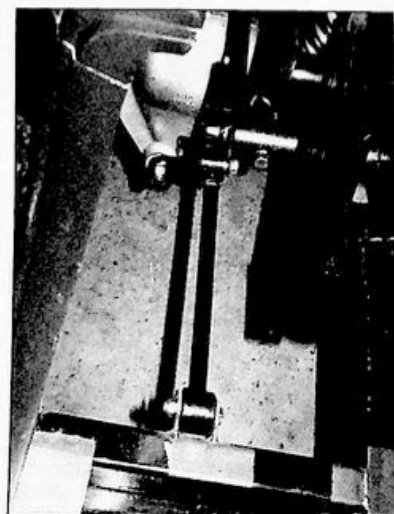
Use a floor jack to roll the assembled rearend under the car and raise it into the back of the frame.



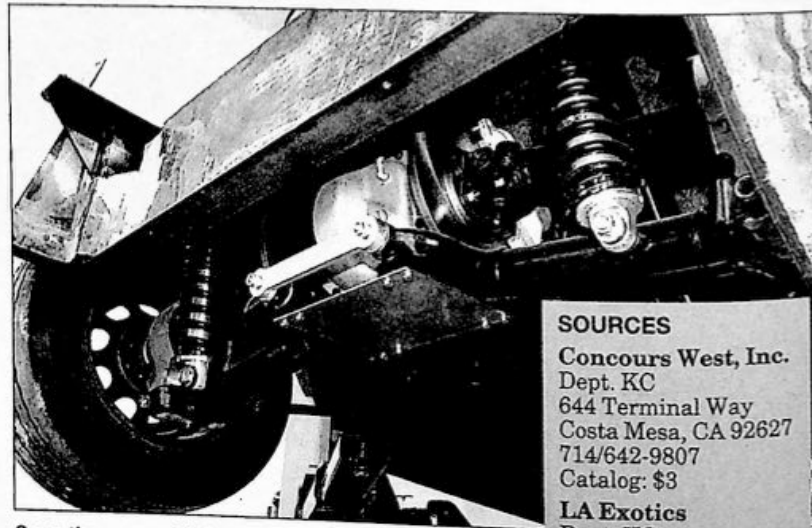
The kit's differential mounting crossmember has adjustable up-per shock mounts with securing bolts screwed into a threaded floating plate (left). The angle of the coil-over shocks (center) affects ride characteristics, and this



transverse adjustment permits experimenting to obtain the desired ride height. Once the desired ride has been achieved, permanently weld the coil-over mounts (right) in place.



The adjustable radius rods provide proper axle positioning to align the rear wheels and transfer wheel thrust to the frame.



Once the rearend is bolted in place, double-check the alignment on the pinion angle as well as the rear wheels, and also check the differential's fluid level. Don't forget to bleed the brake lines. **KC**

### SOURCES

Concours West, Inc.  
Dept. KC  
644 Terminal Way  
Costa Mesa, CA 92627  
714/642-9807  
Catalog: \$3

LA Exotics  
Dept. KC  
6980 Hermosa Cir.  
Buena Park, CA 90620  
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# What does Car & Driver Magazine say about Everett-Morrison's **Cobra** REPLICA 427SC



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"...we have an Everett-Morrison kit designed to accept the current Corvette suspension. Owner Larry Rea of Cedar Park, Texas, built it with his son, Lucas, in ten days."

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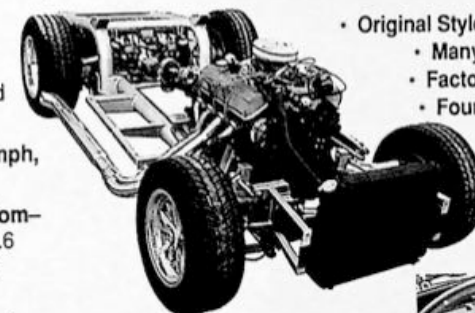
"Braking was exceptionally good at 161 feet from 70 mph, and 1.04g was measured on the skidpad."

"This car holds our record for fastest through the slalom—averaging 71.2 mph (the Nissan 300ZX Turbo did it at 69.6 mph, the old record)." Steering response, though, was quicker than lightning."

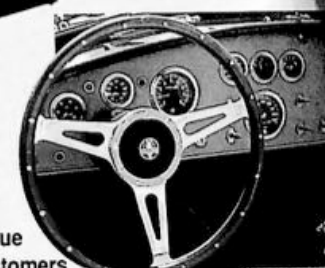
"Everything about the car is skewed in the direction of steering quickness... its light weight, its rear weight bias, its power steering, its short wheelbase, and its low-profile tires on wide wheels. The combination makes a standard Corvette feel as lethargic as a Limousine."

"... the Corvette suspension was more composed than any of the others."

Car and Driver Magazine, December, 1991.



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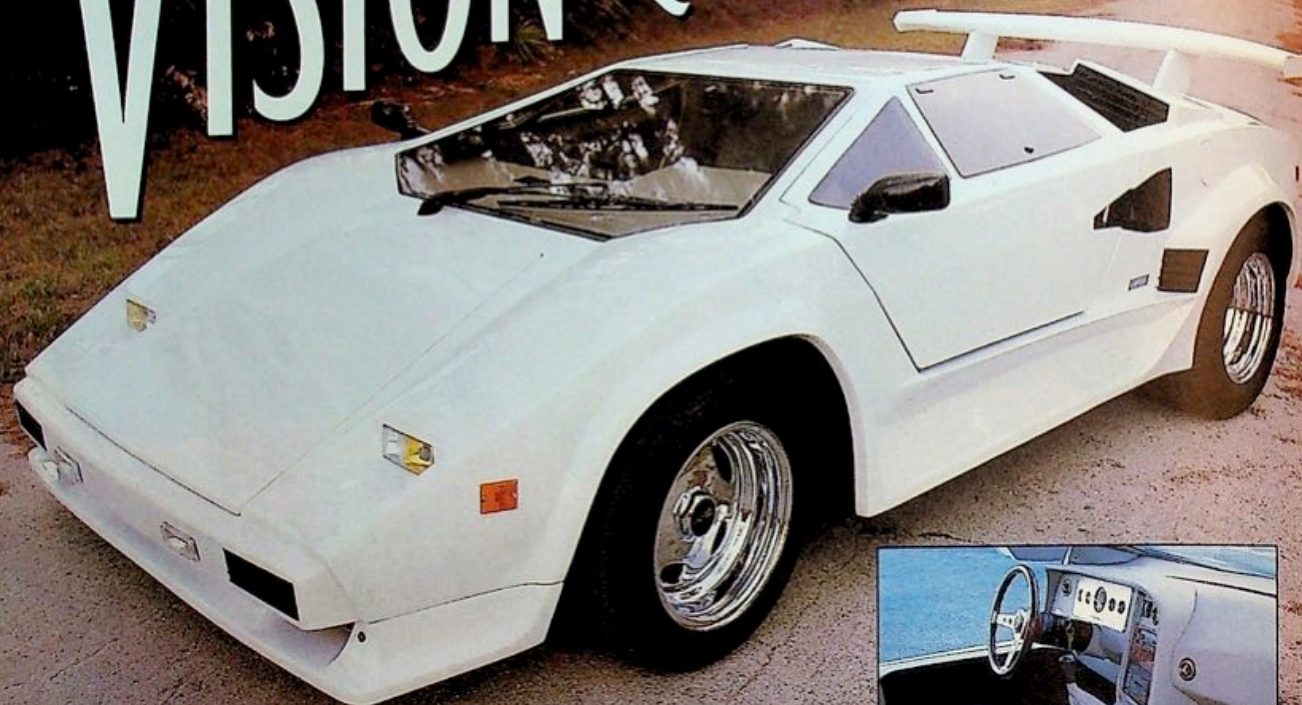
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# VISION QUEST

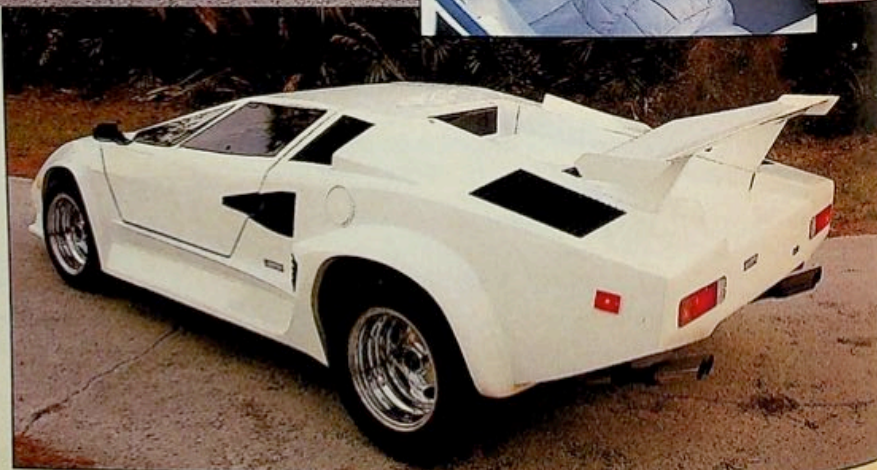


## Final Concept Rewards the Search for a More Practical Countach Replica

By David Fetherston

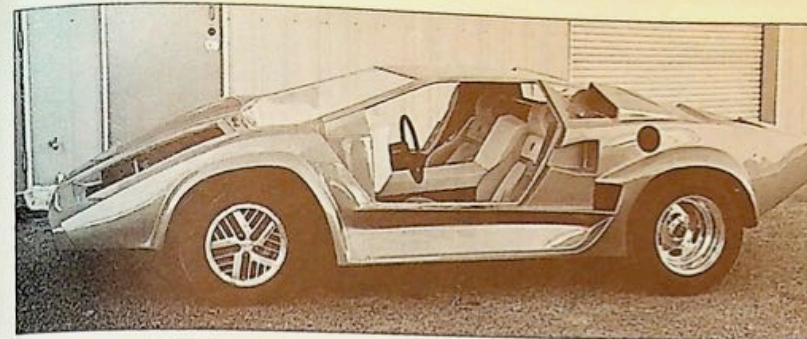
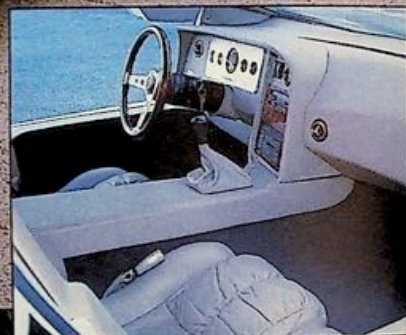
The first Countach replica Mike Heick tried his hand at was an exercise in frustration. Every section of the kit was a hassle, from frame and powertrain to glass and body fit. In describing this Brand X product's substandard engineering, he'd probably agree with Forrest Gump's saying, "Stupid is as stupid does." Heick eventually finished the car but was totally exasperated by what he went through to build it.

An urge to do things right sent him on a two-year journey creating his vision of what a simple, buildable kit should be with no sacrifices in quality. While some Countach replicas have been overburdened with complexity, Heick's new Final Vision 2000, produced by his company Final Concept, is a good example of what can be done with a practical approach. He uses a Fiero donor car for the majority of the chassis, suspension, electrical system and powertrain.

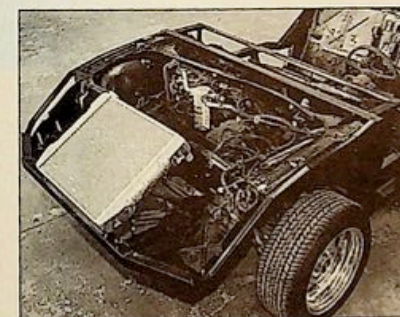
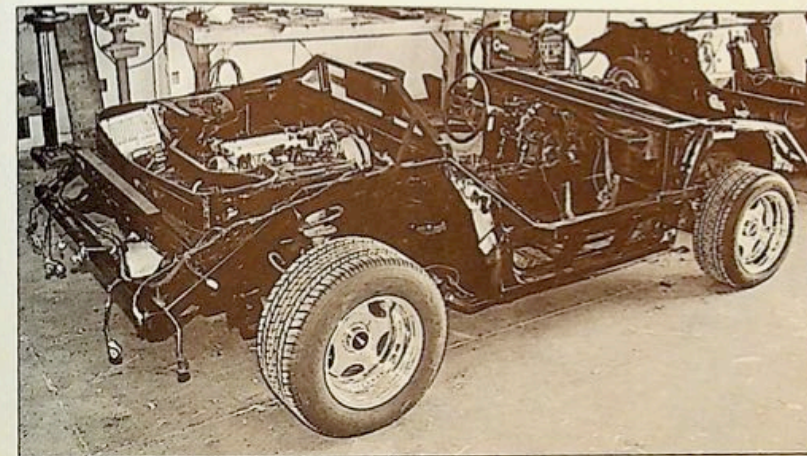


The trick to this new replica is that it has been restyled ever so slightly but still looks right, even though the stock Fiero wheelbase is several inches shorter than a Lambo's. The shortened area is in the spaces between the trailing edges of the doors and the rear wheel openings. To minimize the effect of this restyling on the overall

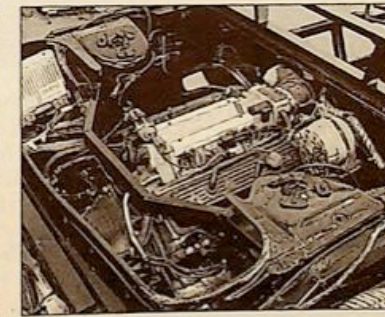
look of the car, the vents and scoops are downsized so they meld with the shorter body. The nine-piece fiberglass body section is handlaid in Final Concept's mold by a boatbuilder with 20 years of experience. The expertise really shows in the layup and bodywork, with high strength and uniform finish quality.



Final Concept's high-quality, marine-grade fiberglass layup is evident in this partially completed Vision 2000.



Final Concept thoroughly reinforces the stripped Fiero chassis with tubular steel subframes prior to mounting the body on it. The fuel-injected LT-1 is mounted longitudinally and mated to a '79-'85 Cadillac/Oldsobile TH325-4L transaxle.

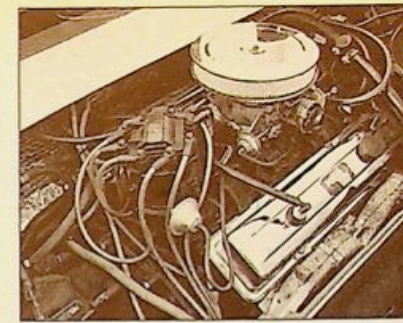


Fitting the new body requires that the Fiero be stripped down to bare basics. All the original panels are removed, as are the doors and roof. A series of 2x2-inch subframes are then welded to the chassis not only to strengthen the basic body structure and floorpan but also to support the new body panels. This engineering was done by Larry Rogers, who is the shop foreman for Final Concept. All the suspension remains stock Fiero, but Final Concept offers a high-performance disc brake upgrade with the company's V8-conversion cars.

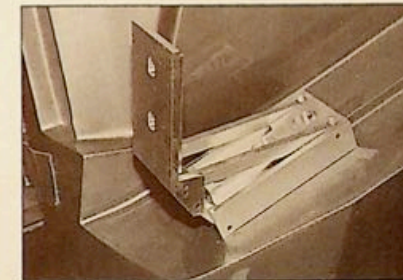
Powering this factory prototype is a Corvette 350 topped with a single 650cfm Quadrajet and backed up by a

stock Fiero five-speed transaxle. A fuel-injected LT-1 engine is possible with this conversion, and a four-speed automatic version is also available. The latter conversion uses a late-model Cadillac/Oldsobile transaxle which allows mounting the engine longitudinally. This conversion is relatively simple and is installed without modifying the body or the wheelbase.

The interior, which was trimmed by Kustom Creations in antelope leather, features a smart-looking makeover using several leather-covered custom fiberglass panels. The dashboard is finished off with digital instruments and a Grant GT steering wheel. One of the neat touches on the



Another V8 swap available through Final Concept installs the V8 transversely and uses the stock Fiero five-speed transaxle.



Final Concept custom-fabricates billet aluminum hinges for the Vision 2000's upward-opening doors.

Final Concept Countach is the custom-fabricated aluminum billet door hinges with bronze bushings. They all work like a charm with a smooth action and a strong and accurate location mechanism.

A basic body kit from Final Concept starts at \$4500, and a deluxe kit with all the goodies costs \$11,800, less the V8 conversion (which starts at \$800 and requires a customer-supplied engine). In addition to the fiberglass components, the deluxe kit includes interior items, lights, vents, door hardware, steel subframes, mounting bolts, mirrors, door windows, custom wheels and even the tires. Templates for the front windshield and rear window are provided for cutting them out of flat sheets of safety glass. A basic turn-key Vision 2000 from Final Concept starts at \$22,500, and a V8-powered version runs \$34,900. This affordable pricing helps explain why Final Concept sells more turn-key cars than kits, which should make sense even to Forrest Gump. **KC**

### SOURCE

**Final Concept, Inc.**  
Dept. KC  
18320-E Paulson Dr.  
Port Charlotte, FL 33954  
941/764-1966



# FIRE 'N' ICE



## One Cool Body Kit for the Hot 5.0 Mustang

By Jim Youngs

One of the most exciting kits introduced last year transforms the common Chrysler LeBaron into a Teutonic exotic, the Mercedes-Benz SL. Jovi's Autobahn Crüser was the first of its type, and true to the kit car credo that imitation is the sincerest form of flattery, this body kit itself has been replicated (read: "splashed") numerous times, spawning a bunch of clone companies.

The savvy boys at Jovi, however, like to stay one step ahead of the game. Jovi has just introduced an even bolder SL body kit for '83-'93 Mustang convertibles. The kit will be marketed under the Ice Cars marque. This new venture may entice those who have been drooling over the stylish SL replica but have been holding back because of their concerns about the LeBaron's lackluster performance. The Mustang donor car not only offers a lot more grunt than the Chrysler-based vehicle, but it is also blessed by a burgeoning aftermarket for 5.0 Ford V8 mods. (Of course, the four- and six-cylinder ponycars will work too, and you can always do a V8 swap.)

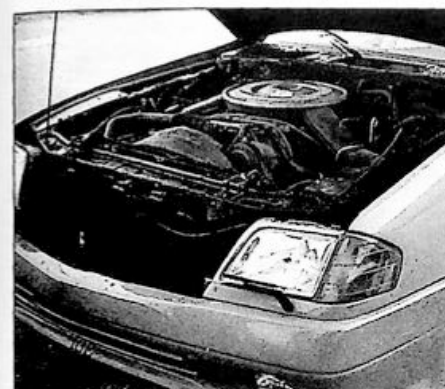
Although Mustang donor cars tend to be a bit more expensive, the higher cost may well be worth it because they aren't just prosaic posers but proven

pavement pounders. Building the Ice SL 5.0 is very similar to altering the LeBaron (see "The Prince and the Pauper," May '96). Ice Cars has gone a few steps further to create a more realistic replica. The basic Ice body package sells for \$5995 and has two fewer fiberglass pieces (11 in all) than the LeBaron kit because the windshield post covers are integrated with the front fenders. Also, unlike the Autobahn Crüser, the Ice car includes options such as a fiberglass



dash cover, outside mirrors and inner door panels. If you'd rather have somebody else hack on the donor car and slap on the panels, Ice will handle the job and prime the car for an extra \$3995. Turn-key cars are also available, with a base price that starts at \$22,500 and depends on the degree of custom treatments.

The car you see here is numero uno, the first ice cube out of the tray, and it's a totally cool statement for this Florida-based firm. The monochromatic yellow paint scheme, with matching interior and wheels, fits right in Miami's trendy South Beach area, which is typically packed with exotic automobilia. While customers in other areas might prefer a more sedate treatment, the fly-yellow is just right for promotional impact. Also, certain Euro Benz tuners, such as



Koenig and Rennspeed, go for high-impact colors and monochromatic graphics. During our visit to Ice Cars, there were four other cars getting final finishes with traditional Benz-style two-tone color schemes. Although we were initially overwhelmed by the bright yellow treatment, we soon warmed up to it. As the interior was going together we found ourselves suggesting other complementing yellow components, such as a steering wheel and a gearshift knob.

Prepping a convertible Mustang for the Ice coating is similar to prepping the LeBaron. You have to remove the hood, the trunk lid, the front fenders, the bumpers and all the body trim. The coil springs should be cut 2 1/2 inches or replaced with shorter units, and the rear wheelwells need to be enlarged to accommodate bigger tires. A reciprocating saw can do the job in short order. Then the edges of the inner and outer sheetmetal need to be tack-welded to provide added strength and prevent vibration. In addition, to get the opened convertible top to sit flush with the new body panels, the Mustang's folding arms require some adjustment and the top of the wheel-

wells must be indented.

The one-piece fiberglass rear clip simply slides over the donor car's rear deck, where it is glued in place with a West System epoxy that is thickened with microfiber filler. Similarly, fiberglass door skins are glued over the donor's doors before rocker panels are bolted on. Next, the front fenders are bolted in place and adjusted for a neat fit with the hood. Attaching the new hood requires new hinges, which are fabricated by Ice, but the donor's latch mechanism remains.

The trunk lid bolts to the existing hinges and uses the stock latch mechanism. Finally, the front and rear bumper covers are bolted to steel bumper supports (which are included in a \$500 steel package) and aligned and fastened to adjacent fiberglass pieces. The steel package also includes headlight-mounting brackets.

Once all the fiberglass pieces are installed and aligned for even seams and a good fit, the car is ready for the distinctive O.E.M. grille, headlights and taillight lenses, which can be sourced from a dealership or parts importer. Expect to spend a little more than \$1000 for those components. Driving lights for the chin spoiler openings are inexpensive units from a discount parts store. If this were our car, we'd swap the Ice crystal grille emblem for a three-pointed star, which we understand runs about \$35 and neatly plugs into the center of the grille bars.

The interior of the donor Mustang can stay stock or be dressed up to replicate something more exotic. Ice offers an optional interior package (\$950), which includes a dash cover and door panels. Other options are a three-window convertible top (\$600), which fits on the donor's top bows, mirror housings (\$195) and several other upscale touches to really tailor the car. We also recommend the billet aluminum wheel spacers (\$125 each), which change the bolt pattern to allow use of O.E.M. wheels.

To be sure, the Ice is one of the coolest kits to come along in a long time, and it's great to know that you won't have to flog a LeBaron to achieve performance that can even embarrass a Benz. **KC**

### SOURCE

Ice Cars  
Dept. KC  
6278 N. Federal Hwy., Ste. 469  
Ft. Lauderdale, FL 33308  
954/568-1175

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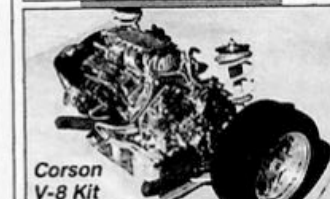
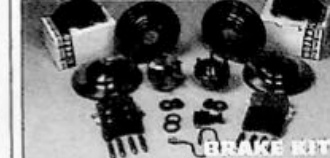
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# 'Glass Guide

## Where to Find Fiberglass Products

By Lynn Marie

Nearly all kit car bodies are made from a composite laminate of polymerized petrochemical resin reinforced with lime-alumina borosilicate filaments—that's fiberglass to you and me. Sources for this sticky stuff are not always easy to find, though, because fiberglass is used to build boats and other nonautomotive projects more often than it's used on cars. So this buyers' guide includes some unusual companies and references which actually can be of great assistance to kit car enthusiasts. In addition to simple polishing and protective products, we've supplied information on repair kits, instructional materials and many other items that can help anyone working with fiberglass.



### Buffed-Out

If your kit body's color gel-coat is looking a bit tired and faded, 3M Marine Trades has a product which should make your life a little easier. The company claims its Marine One Step fiberglass cleaner and wax will clean, polish, protect, and remove light to

medium oxidation all in one step. 3M Marine Trades, Dept. KC, 3M Center Bldg. 223-6N-01, St. Paul, MN 55144.

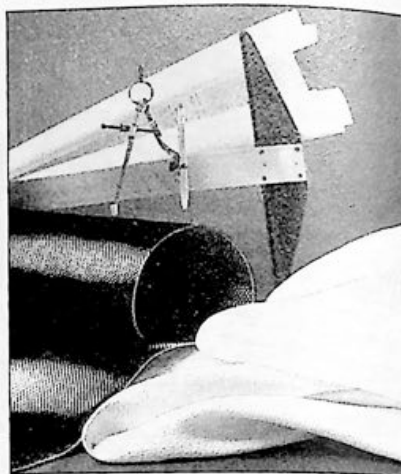


### Make My Day

Eastwood's Guide Coat can help you find flaws on the surface of your car so small they cannot be seen or felt. The company claims that after you spray a light coat, flaws will appear as dark spots. Just sand them out to get the best possible finish on your paint job. The Eastwood Company, Dept. KC, 580 Lancaster Ave., Box 3014, Malvern, PA 19355, 800/345-1178.

### One for All

Protect All is said to be a true all-in-one product which cleans, polishes, waxes, protects and treats all surfaces and leaves an antistatic, water-repellent shine. The manufacturer says it works on all hard surfaces and certain soft ones, such as vinyl, rubber and plastic. Protect All, Inc., Dept. KC, 1910 E. Via Burton St., Anaheim, CA 92806, 800/322-4491.



### Everything You Always Wanted to Know...

Fibre Glast Developments' free 48-page catalog, *Ideas Happen!*, offers a wide array of fiberglass materials, such as fabrics, resins, pigments, carbon fiber, Kevlar and core materials. Also available are tools and instructional pamphlets. If you're just getting started in working with resin and glass, take a look at Fibre Glast's \$19.95 video, *The Basics of Fiberglass*, which provides a thorough introduction to the materials, tools and steps used in fiberglassing. And for those who want to try their hands at creating custom bodies, Fibre Glast has two videos—*Advanced Moldmaking & Plug Construction* and *A Step-by-Step Guide to Molding Fiberglass*—which detail the construction of a plug, a polyester mold and an actual car shell. Fibre Glast Developments Corp., Dept. KC, 1944 Neva Dr., Dayton, OH 45414, 800/821-3283.



### Gentle Persuasion

Sometimes getting a fiberglass panel to fit requires some light tapping, but doing so may damage the material. To prevent that from happening, try the Soft Blow mallet. Developed for applying body moldings on automotive assembly lines, this product is made from Sorbothane, a patented viscoelastic material designed to absorb energy on impact to prevent marring and denting. Sorbothane Inc., Dept. KC, 2144 State Rte. 59, Kent, OH 44240, 216/678-9444.

# Warlock Designs



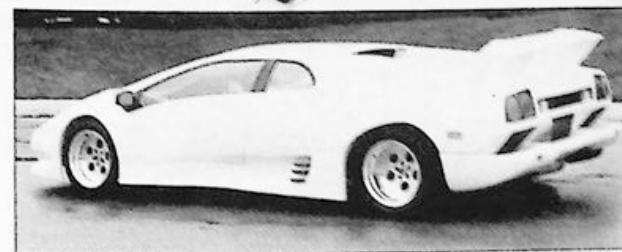
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### Wrinkle Cream

You've prepped your fiberglass body for painting, but the surface still shows scratches and fiberglass strand marks. What do you do? Try Compositite's Spray Max, a polyester primer and surfacer which the company claims has superior adhesion and flexibility and exceptional film-building characteristics to fill grind marks, deep scratches, pinholes and other imperfections. Compositite says Spray Max is ideal for repairing rough bodywork and reconditioning fiberglass bodies. Compositite, Dept. KC, 5051 Snapfinger Woods Dr., Decatur, GA 30035, 707/322-8530.

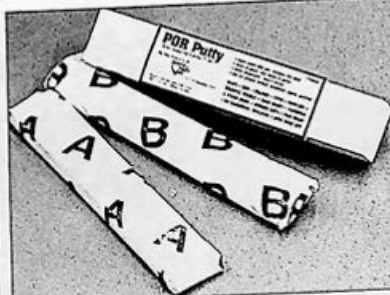
50 KIT CAR



## 'GLASS GUIDE

### Here's the Rub

The Wax Shop says its new Polishing Compound has a mild abrasive which removes oxidation from painted surfaces and water spots from paint, glass and chrome. Another potential use of particular interest to kit car owners is for removal or reduction of scratches on Plexiglas and Lexan pieces. The Wax Shop, Dept. KC, P.O. Box 10226, Bakersfield, CA 93389, 805/397-5274.



### Putty in Your Hands

If you need to repair a steering wheel, dash knob or other hard-plastic item on your kit car, try RestoMotive's Por Putty, a two-part epoxy mixture. The manufacturer also has a number of other automotive repair and restoration products. RestoMotive Laboratories, Dept. KC, P.O. Box 1235, Morristown, NJ 07962, 800/457-6715.

### Line in the Sand

Details, details—having trouble sanding those fine creases in your kit body? Style-Line's Pulse profile sander is a lightweight handsander designed for repairing detailed feature and style lines. Style-Line Corp., Dept. KC, P.O. Box 5276, Athens, GA 30604, 706/354-6782.

### Extreme Clean

For restoring heavily oxidized color gelcoat, you may need a marine-grade product, such as the Nautical Ease Super Duty fiberglass cleaner. Designed to work on gelcoat damaged by a harsh marine environment, this aggressive, oil-enriched compound is said to remove even the toughest oxidation. Nautical Technologies, Dept. KC, 2060 Wieneke Rd., Saginaw, MI 48603, 800/783-7507.



## STREET ROD!



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### Body Double

Would you like to know how the pros make fiberglass bodies? Street Rod! Fiberglass Bodies & Custom Chassis is a 46-minute video that goes behind the scenes with some of the most respected reproduction body fabricators, such as Wescott, Old Chicago and C&G Automotive Cobras, and reveals their techniques for molding, layup, fabrication and assembly. Ray Parks Video Productions, Dept. KC, P.O. Box 5669, Aloha, OR 97006, 503/649-7007, ext. 33. **KC**

**SOURCE**  
Gougeon Brothers, Inc.  
Dept. KC  
P.O. Box 908  
Bay City, MI 48707  
517/684-7286

### Gougeon's Goodies

For one-stop shopping for fiberglass and epoxy supplies, look no further than Gougeon Brothers. This respected supplier to the marine industry has all sorts of stuff that is useful to kit builders as well. Here's just a small selection.

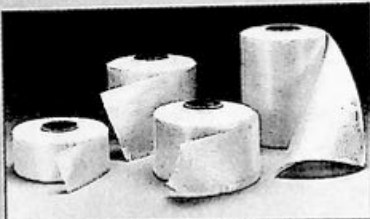


Need a quick fix for a fracture? Gougeon says its portable Handy Repair Pack has everything you need to complete small repairs with epoxy.

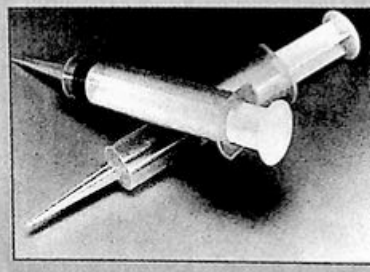


Working with epoxy is a bit trickier than working with conventional resin and glass. If you'd like to know more, check out the 20-minute video, Basic Application Techniques. Also available is a video titled Fiberglass Repair.

Life's messy—keep clean with protective coveralls and sleeves. Gougeon says they are made of a strong, lightweight, rip-resistant, non-absorbing material that's inexpensive enough to be disposable yet durable enough to be used repeatedly.



If you're having trouble fastening your fenders to the body or working in any tight section, Gougeon's biaxial tape may be just what you need. The tape contains two layers of E-glass fabric with the fibers laid at 45-degree angles and held together by a light stitching. The company claims the construction yields more stiffness and a smoother finish than traditional woven fabrics.



When building or repairing a kit car, you may need to apply epoxy in areas that are hard to reach with a brush or a squeegee. A reusable syringe can be loaded with an epoxy mixture for injection into screw holes to bond hardware.

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# SECRETS OF CHASSIS TUNING

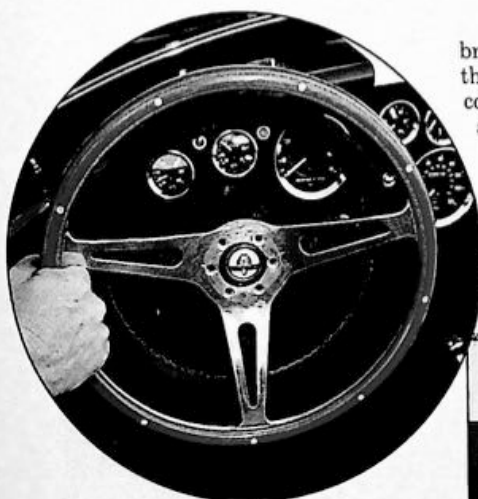
## How to Get the Most Out of Your Suspension

By Steve Temple

Even a virtuoso can't perform well if the instrument is out of tune. That's true whether you're talking about a cello or a chassis. All a musician needs to get things in harmony, though, is a tuning fork and a sensitive ear. If only it were so simple to set up a suspension. To find the right rhythm, we spent some time with a maestro of performance, Dean Borchert. He's spent a lot of time in NASCAR pits, but currently he is crewchief for a fleet of Mustangs, Formula Fords and several other vehicles at the Bob Bondurant School of High Performance (see "Snake Wrangler" elsewhere in this issue). He recently developed a Bondurant course on chassis tuning, which can be tailored for road racing, oval track racing, Co-



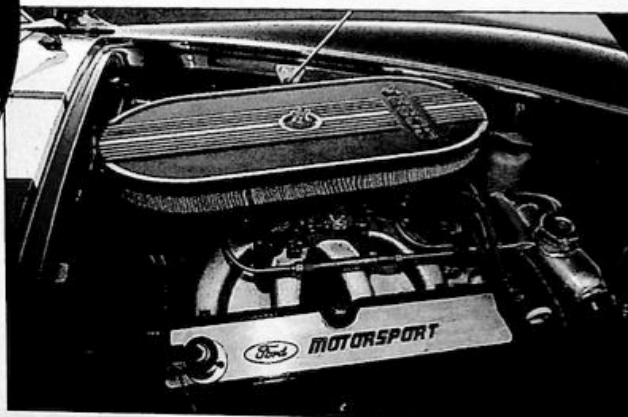
Monroe supplied Sensa-Trac shock absorbers custom valved specifically for Bondurant's Superformance Cobra.



One immediate change to improve the car's handling was swapping the vintage-style, large-diameter wheel for a smaller-diameter one. Doing so required changing the caster setting and adding power steering.

bras and other vehicle types. Later this year, we plan to attend the course, which will cover subjects such as suspension settings, four-corner weighing, Ackerman theory, scrub radius and antidive. In the meantime, we thought you'd like to get

an overview of how Borchert modified the factory settings on the Superformance Cobra. Some of the changes are specific to this type of vehicle, but we also asked him for some general guidelines on chassis tuning that ap-



When Bob Bondurant raced the original Cobras, he preferred Ford's 351W over a big-block for better handling, but the Ford execs insisted. He finally got his way on his Superformance Cobra, but he plans to offer 427-powered versions as well.

PHOTOGRAPHY: STEVE TEMPLE  
BONDURANT TECHNICIAN/MODEL: SAM STOCKHAM

ply to a broad range of vehicles.

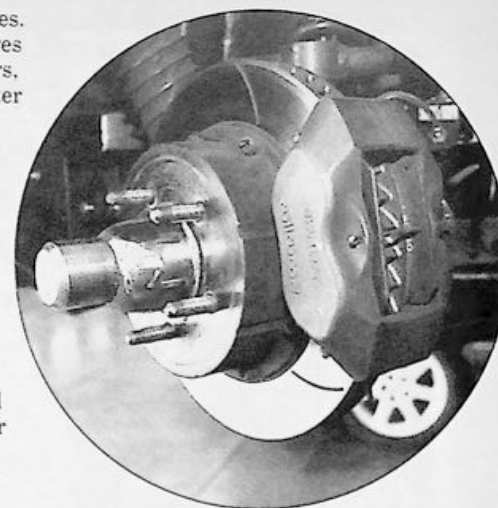
Borchert readily admits chassis improvements on a Cobra are inherently limited because of its short wheelbase and narrow track width, but that's also part of the car's appeal. A Cobra can be a real brute to handle, and mastering it requires dedication and skill, so the last thing you need is a suspect suspension setup. His goal was not to turn a street car into an all-out racer—the ride would be just too uncomfortable for regular use. Instead, he intended to improve the roadcourse response and make the car more user-friendly.

One of the first changes on this particular Cobra was swapping the original-style, large-diameter wooden steering wheel for a smaller one with a fatter, leather-covered grip. The smaller wheel provides more clearance in the cockpit but less mechanical advantage over the rack, so a race-quality Sweet power-steering system was installed. The system requires nearly one less turn from lock to lock.

As for the basics of chassis tuning, Borchert says the first and most im-

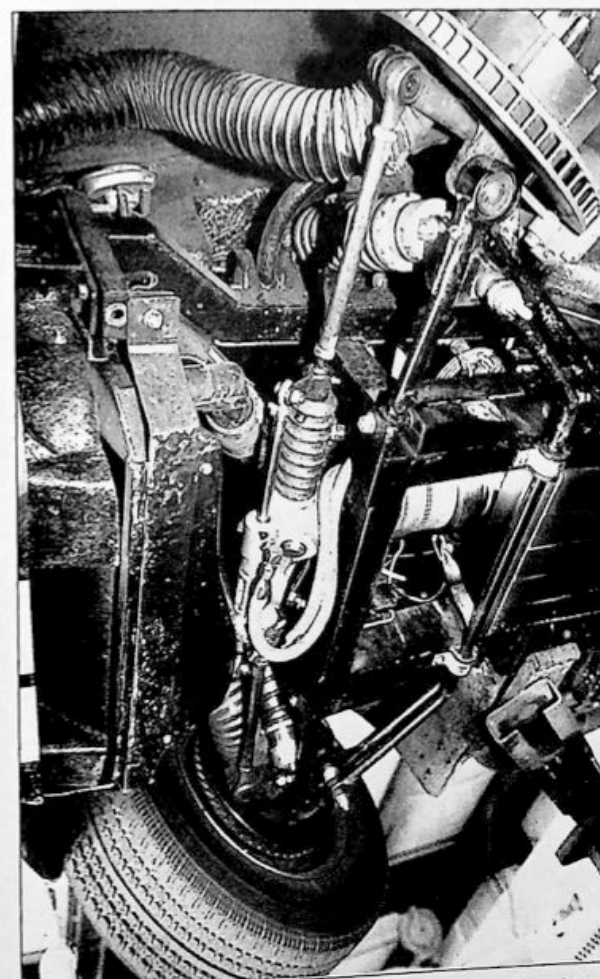
portant step is checking the tire sizes. Low-profile, plus-sized 40-series tires have become popular in recent years, and they can help lower a car's center of gravity for better handling. On the other hand, they look really out of place on a Cobra because they don't fill up the wheelwells, and at the limit of adhesion they can let go much more suddenly than tires with taller sidewalls. So if you've got a Cobra, stick with the old-style profile (in the front, try P245/60R15s, a fairly common size, and in the rear, use P275/60R15s, a little harder to find but both BFGoodrich and Goodyear should have them).

Ride height should be about 6 to 8 inches above the ground. When ride height is less than 4 inches, the tires scrub too much and can't be leveraged to increase the size of the contact patch for better grip. Optimizing the alignment is also essential. Borchert recommends as much as 2 degrees of negative camber in the front and about 1/2 degree of negative camber on an independent

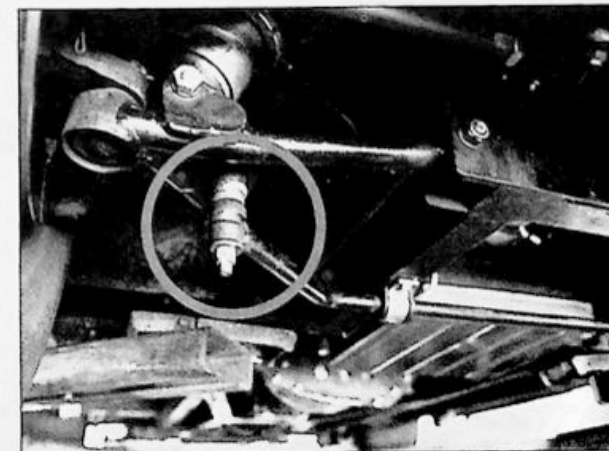


Wilwood four-piston calipers with larger vented rotors improve both stopping ability and durability on a roadcourse.

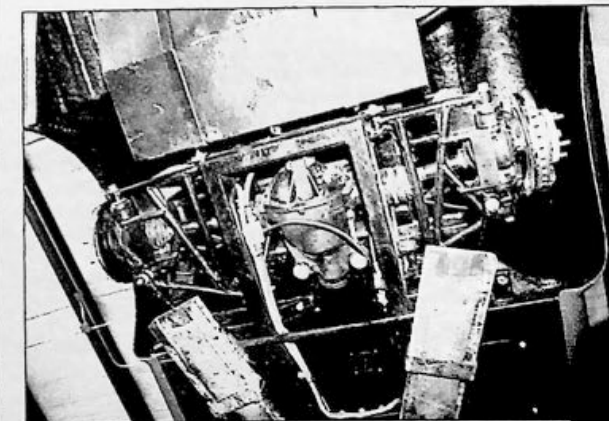
rearend. Toe-in should be about 0.125 inch in the front and 0.080 inch in the rear. Originally, the Superformance Cobra's caster was set at 5 degrees, but



The Sweet power-steering unit not only requires less effort but also is much quicker, with only 3 1/4 turns from lock to lock.



Spacers are used to eliminate preload on the sway bars for an equal turning response in either direction.



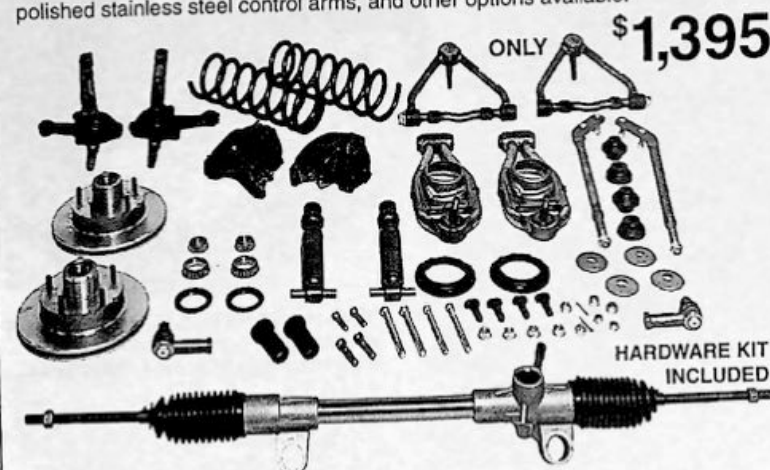
On this modified Thunderbird independent rearend, Borchert suggested a setting of 1/2 degree of negative camber.

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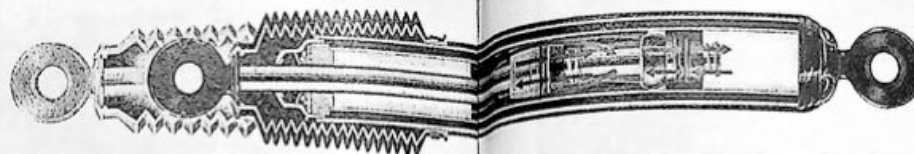
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## SECRETS OF CHASSIS TUNING



Monroe's Sensa-Trac shock employs a Position Sensitive Damping system that provides a variable response to differing road conditions. Tapered grooves in the pressure tube allow fluid to pass freely around and through the piston during its midrange travel. In more demanding conditions, such as on a high-speed roadcourse, the piston moves beyond the grooves to where fluid flow is restricted, giving the shock greater control of the spring's rate of rebound.

he reduced that to only 2 degrees because the smaller steering wheel requires more effort to turn, even with the addition of power steering. With the current arrangement the car will remain stable up to about 135 mph, but for higher top speeds more caster may be necessary. On the other hand, a big-block-powered car may require even less caster for lighter steering effort (this particular vehicle was fitted with a Ford 351W).

After you check these preliminary items, then you can begin to play with the spring and shock combinations. That's where Monroe got into the act with its new Sensa-Trac shock absorber with Position Sensitive Damping (PSD), a mechanical system that provides a variable rate of response for a soft ride on smooth pavement but a stiffer ride under hard cornering loads for better road holding. Not only that, Monroe's field technicians worked with Bondurant to custom-valve a set of these shocks specifically for the Superformance Cobra. What these Monroe units translate to is a Cobra that can run smoothly over bumpy pavement without knocking your teeth loose but still whip through a slalom without rolling and weaving.

The philosophy behind the extensive amount of suspension work done on Bondurant's Cobra supported creating a street car with firm, yet not harsh, suspension for handling a high-performance roadcourse. This new Monroe SSC custom shock is available only through Bondurant or Superformance. Monroe's tech line can assist owners of other makes of kit cars who wish to take advantage of this new Sensa-Trac shock.

Another change on the coil-overs was using Eibach's cold-rolled springs. Borchert says he's seen some other brands vary as much as 40 pounds per inch in the spring rates,

but he's found Eibach products to be consistent within precise tolerances of less than 1 pound. The exact required spring rate will vary with the geometry of the arms, but Borchert's rule of thumb is 2 inches of travel on all four corners. If you drive your car solo most of the time, you may want to set the coil-overs on the driver side slightly higher to offset any imbalance. From this point, he works with different sway bar diameters to achieve car balance. For even steering response in opposing directions, he takes the preload out of the sway bar by attaching one side, letting it sit at the level it wants and then filling in the gap with spacers or washers.

Following all these tips won't guarantee that you'll perform as well as Bob Bondurant, but they should help you at least avoid hitting any sour notes. **KC**

## SOURCES

Bob Bondurant School of High Performance Driving  
Dept. KC  
P.O. Box 51980  
Phoenix, AZ 85076-1980  
800/842-7223

Eibach Springs  
Dept. KC  
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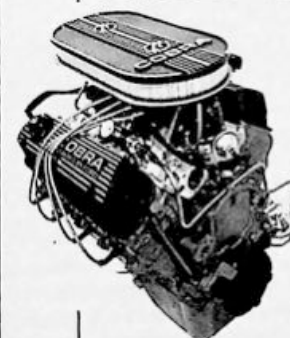
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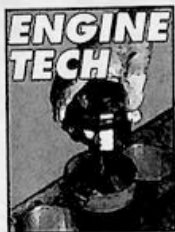
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# Stroker ACE



## Put More Cubes In and Pull Out More Power

By Pete Saueracker

If your kit car's engine compartment is constricted but you want more sizzle from your small-block, a stroker kit is the ticket. It adds cubic inches, and cubic inches mean power. Not only is a stroker kit one of the easiest and most sensible ways to increase output, it also doesn't affect the external dimensions of the engine. In addition, the costs can be nearly as low as a stock rebuild. We'll cover the basics on stroking a 5.0-liter Ford V8 to as much as 5.8 liters (355 ci), but the principles apply to a wide range of engines.

### Basics

First, let's start with the basics. Engine size, called displacement, is a measure of the volume of air and fuel the engine can breathe in and out on each stroke. The more air and fuel an engine breathes in, the more power it will make. Displacement is determined by the diameter of the cylinders, called the cylinder bore, and the distance the piston moves down the cylinder as the engine draws in fresh air and fuel on the intake stroke.

The distance the piston moves is directly controlled by what is called the stroke of the crankshaft. The stroke is measured as twice the rod-journal offset distance, also called the stroke radius. The 5.0 engine employs a cylinder bore of 4.00 inches and a stroke (twice the stroke radius) of 3.00 inches. This bore and stroke relationship results in a displacement of 37.75 ci per cylinder, for a total of 302 ci (5.0 liters).

If you increase the crankshaft stroke, the piston movement down the cylinder will increase by an equal amount, and the engine will draw in 58 KIT CAR

more air and fuel per intake cycle. Typical 5.0 stroker kits provide crankshafts with strokes increased from the stock 3.00 inches up to 3.25, 3.48 or even 3.50 inches.

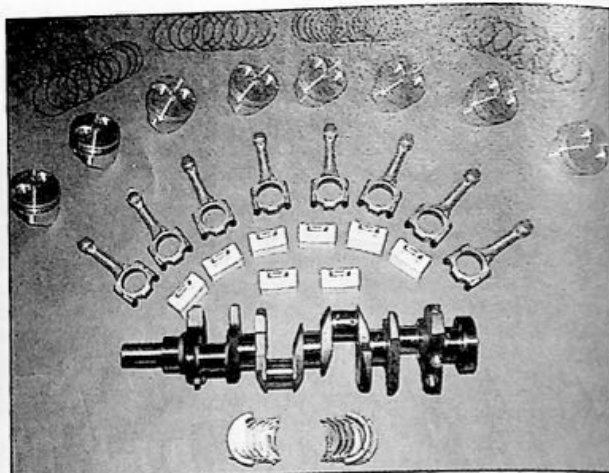
In order to stroke an engine you must change the stroke length, and this task requires a completely different crankshaft. There is no way to "lengthen" your stock crank without sending it out to be remanufactured. You need more, however, than just a new crank. Stroking an engine requires new connecting rods and new pistons as well. Here's why.

### Juggling Cranks, Rods and Pistons

When you lengthen the stroke, the piston will rise higher in the cylinder than it did before. Generally speaking, if you make no adjustments for this change, the pistons will rise right out of the top of the block and hit the cylinder heads and valves. Kaboom.

Therefore, either shorter rods or redesigned pistons—or both—must be employed in order to make a stroker kit comfortably fit into the original block. What are the pros and cons of changing the rods, changing the pistons or changing both?

The easiest way to adjust for the longer crank stroke is to shorten the piston. This task is done by moving the wristpin higher in the piston by exactly the stroke-radius increase (half the increase in the stroke). Thus, if you increase the stroke by 0.250 inch, you must raise the wristpin by 0.125 inch. Many stock pistons are very oversized to begin with, so there is a lot of room to move the pin without putting it up in the oil rings. How-



Stroker engine kits come with a stroked crank, pistons, rings and bearings. Most kits come with new rods too. This kit is from Match Port Engineering, and it is the lowest-priced kit among those we investigated. Prices are in the \$1200-\$1400 range for the full kit—not a whole lot more than the cost of stock rebuild parts.

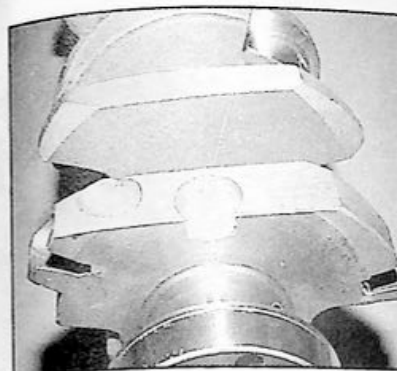
ever, moving the wristpin around requires the use of a custom piston. There are no stock 5.0 pistons that will put the pin in the right place.

### Everything Is a Trade-Off

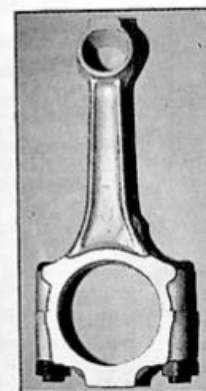
There is a drawback that comes with adjusting for the increased stroke by doing it all at the piston. The length of the connecting rod is important to the power an engine makes. The longer the rod in relation to the stroke, the better. When you lengthen the stroke without lengthening the rods, the ratio of the rod to the stroke (the rod ratio) gets worse. This robs power and increases the sensitivity of the engine to pinning. Thus, a stroked motor should also increase the length of the rods to keep as close to the stock 5.0 engine's 1.7:1 rod ratio as possible.

Lengthening the rod, however, puts us back where we started. The piston will rise higher in the block and perhaps even pop out the top, crashing into the head. Once again, to accommodate for the longer rod, you must move the wristpin up in the piston. Obviously you will reach a point where you can't raise the wristpin any farther. The question then becomes, can you get it up high enough to give you the room needed for a longer stroke and a longer rod, yet keep it all happy inside the stock 5.0 block?

There is one last factor to consider in all of this, and that is the matter of compression ratio. Remember, most stroked motors are designed to work with the original cylinder heads and combustion chambers. Static compression ratio is defined as the volume of air and fuel drawn into the engine on the intake stroke compared to the



The heart of any stroker kit is the crank. Most companies start with a factory Ford crank and completely rework it. Generally, they use a crank from a bigger engine that has a larger stroke. This unit, from Match Port Engineering, is highly reworked to provide the proper stroke and balance. Note how much the counterweights have been cut down to fit the 5.0 design. Match Port balances its kits to 28 oz-in so you can use your stock late-model flywheel or flexplate. The kits can be made for the earlier 50-oz-in balance if so desired. Check out this possibility when consulting any stroker-engine-kit company.



To keep the rod ratio in the proper range, new rods really ought to be used. These forged rods are from Ford and have been remanufactured by Match Port to fit the 5.0 engine. In the 5.7-liter kit, the rods are 5.363 inches long, compared to the stock 5.0 length of 5.090 inches. In

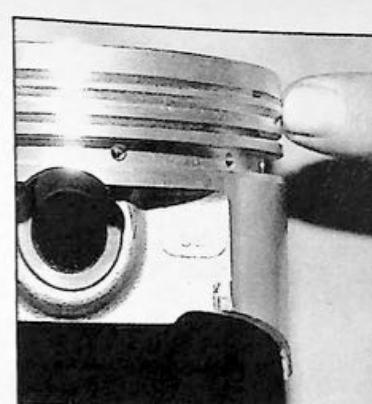
the 5.4-liter kit, the rods are shorter, measuring out at 5.192 inches.

volume of the combustion chambers. A 10:1 compression ratio would mean that the combustion chamber is one tenth the volume of the displacement for each cylinder.

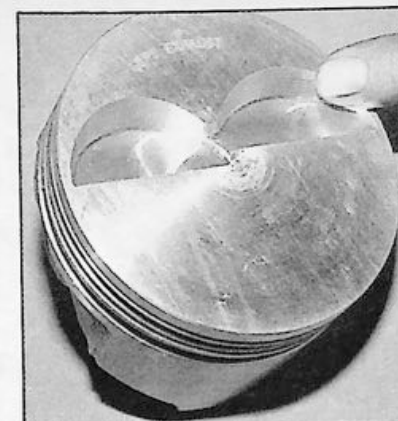
When you increase the displacement of a cylinder by stroking it (from the 5.0 engine's stock 37.75 ci up to, say, 43.375 ci), the compression ratio will go up dramatically given the same size of combustion chamber above the piston top in the cylinder head. Thus, either you must swap to larger heads with larger combustion chambers, or you must reduce the compression ratio by putting some kind of a "dish," or depression, in the top of the piston.

### The Ideal Combination

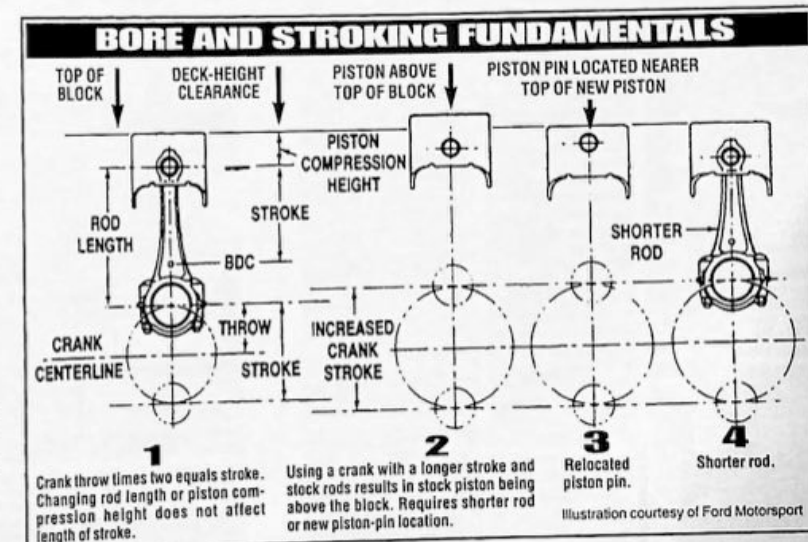
The best combination of parts for the ideal stroker motor would be an



Match Port uses a special hypereutectic cast-aluminum piston from Keith Black. It is very lightweight and stronger than a standard cast piston, and it costs less than a forging. Notice that the wristpin is so high in the piston it almost sits in the oil-ring groove. The top and second rings are  $\frac{1}{8}$  inch with a 3mm oil scraper, the top choice among endurance racers today.



To get the static compression ratio down to a reasonable level, most pistons employ large valve reliefs. This depression in the top of the piston adds to the combustion-chamber volume and reduces compression. This hypereutectic piston from Match Port employs a 6.5cc dish in the two valve reliefs.



increased stroke at the crank, lengthened connecting rods, special pistons that move the wristpin up so high that everything still fits without difficulty, and dished piston tops. Sound impossible? It isn't.

Most of the commercially available stroker kits for the 5.0 engine raise displacement to 5.3 liters (332 ci), 5.7 liters (347 ci) or even 5.8 liters (355 ci). They employ longer rods for a suitable rod ratio, and they also keep compression down to the 10:1 range and below. Adding cubic inches to the 5.0 engine can really add some significant power—power that is there before you begin applying all the other tried and true power-building, hot-rodding techniques. Furthermore, cubic inches generally add a lot of lower-rpm power—exactly what is needed for enthusiastic street use. **KC**

### SOURCES

#### Crawford Performance

Dept. KC  
10330 SW 187 St.  
Miami, FL 33157  
305/235-5333

#### Match Port Engineering

Dept. KC  
4443 W. Ina Rd., No. 131  
Tucson, AZ 85741  
520/327-8917

#### Nowak and Company

Dept. KC  
249 E. Emerson Ave., Unit F  
Orange, CA 92665  
800/282-7996

#### Probe Industries

Dept. KC  
42257 6th St. W., Unit 307  
Lancaster, CA 93534  
805/945-3363



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EAST COAST  
SINCE 1966

## VW AIR COOLED

### PERFORMANCE CARBURETOR KITS



### WEBER



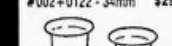
### PROGRESSIVE



### SINGLE 1-BARREL I.D.F.'s



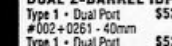
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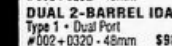
### AXLE BEAMS



### FLOOR PANS



### NEW STOCK CARB



### K & N FILTER ASSEMBLIES



### CAMSHAFTS



### PERFORMANCE



### REAR HALF PAN



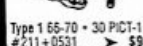
### REAR HALF PAN



### PISTON & CYLINDER SETS



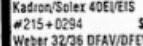
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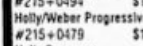
### 2-BARREL 32/36 DFEV's



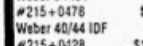
### 4-BARREL 40/44 I.D.F.



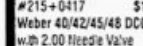
### DUAL 2-BARREL I.D.F.'s



### 2 1/2" DROP SPINDLES



### NEW WHEEL CYLINDERS



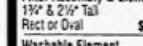
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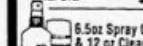
### NEW BARE



### REAR HALF PAN



### REAR HALF PAN



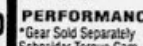
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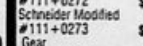
### REAR HALF PAN



### REAR HALF PAN



### REAR HALF PAN



### REAR HALF PAN



### NEW STOCK CARB



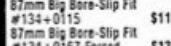
### K & N FILTER ASSEMBLIES



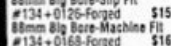
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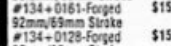
### PERFORMANCE



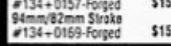
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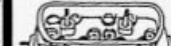
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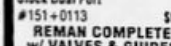
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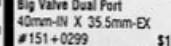
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## BOSCH

OVER \$1,000,000  
BOSCH Automotive Products IN STOCK

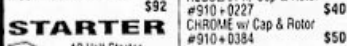
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### 009 DISTRIBUTOR



### STARTER



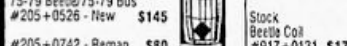
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### IGNITION COIL



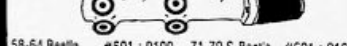
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### STOCK CLUTCH DISC



### PERFORMANCE CLUTCH DISC



### SHOCKS



### GR-2



### LOW PRESSURE GAS



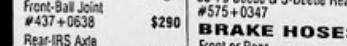
### BEARINGS



### DISC BRAKE CONVERSION KIT



### NEW BARE



### REAR HALF PAN



## SACHS



### STOCK CLUTCH COVER



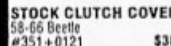
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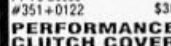
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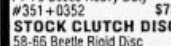
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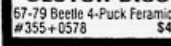
### LOW PRESSURE GAS



### BEARINGS



### DISC BRAKE CONVERSION KIT



### NEW BARE



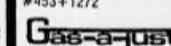
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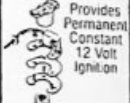
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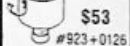
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## ELECTRONIC IGNITION



### IGNITION WIRES



### STEERING GEAR BOX



### RODS



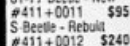
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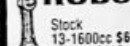
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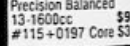
### BEARINGS



### DISC BRAKE CONVERSION KIT



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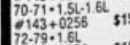
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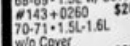
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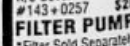
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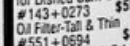
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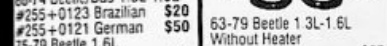
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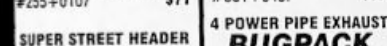
### STOCK MUFFLER



### DUAL EXHAUST SYSTEM



### 4 POWER PIPE EXHAUST



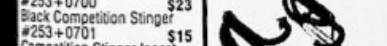
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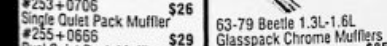
### BAJA EXHAUSTS



### MONZA EXHAUST SYSTEM



### TUCK-AWAY DUAL SYSTEM



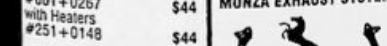
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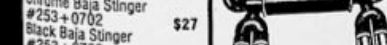
### KADRON



### PERFORMANCE CARBURETOR CONVERSION KITS



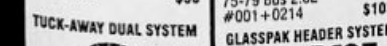
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### NIGHT DESIGN



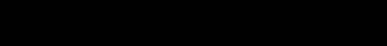
### 2-1/16" DIAMETER



### 2-1/16" DIAMETER



### 2-1/16" DIAMETER



## WEBER



### DUAL SIDEDRAFT MANIFOLD & LINKAGE KITS



### TRIPLE SIDEDRAFT MANIFOLD & LINKAGE KITS



### SIDEDRAFT CARBURETORS



### DUAL PROGRESSIVE CONVERSION KITS



### BROSPEED SUPER TIPS



### STOCK CHROME



### STOCK CHROME



### STOCK CHROME



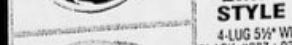
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### STOCK CHROME



### STOCK CHROME



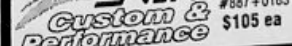
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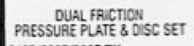
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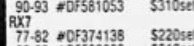
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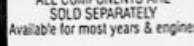
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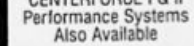
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### STOCK CHROME



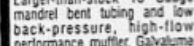
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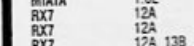
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### STOCK CHROME



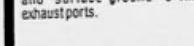
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### STOCK CHROME



### STOCK CHROME



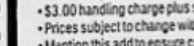
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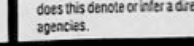
### STOCK CHROME



### STOCK CHROME



### STOCK CHROME



### STOCK CHROME







Thunder Ranch President Tom McBurnie demonstrates with a tooling mold how the windshield fits.

## An Exclusive Sneak Preview of a Long-Awaited VW Rebody—Plus a Sampler of New VW-Based Kits

By Steve Temple

To all those readers who were as miffed and frustrated as we were by the stillborn Riot concept car we ballyhooed in our September '94 issue ("Back to the Future"), all we can say is: Better late than never. The originator of this vehicle, erstwhile kit manufacturer Adrian Corbett, has moved on to new endeavors, but Tom McBurnie of Daytona Spyder replica fame picked up the project and is just now rolling it out. We had planned a full color feature on this exciting new VW-based kit for this issue, but a last-minute snafu prevented that from happening (you'll have to get the details from McBurnie). We'll keep our fingers crossed for the following issue, but in the meantime, check out these photos of the first-ever Riot under construction.

The one-piece body of this \$3650 kit fits easily over a stock VW pan with no modifications required other than removing the Beetle's body panels and relocating the battery. Thunder Ranch claims that assembly time is less than 40 hours.

Fit and finish on the body appears to be excellent, with flanges lining up evenly over the stock mounting locations. Marks for the bolt holes are molded into the fiberglass.



### MORE VW KIT STUFF

For all those die-hard fans of VW-based kits, here's a selection of some items that'll whet your appetite. We know of other VW kits in the works too, so stay tuned for future issues.

### BITTEN BY THE LOVE BUG?

Here's the cure. For readers with an insatiable love of air-cooled VWs in any of their many forms—Beetles, vans, dune buggies, race cars and, of course, VW-based kit cars—here is the book for

### VOLKSWAGEN CUSTOMS & CLASSICS

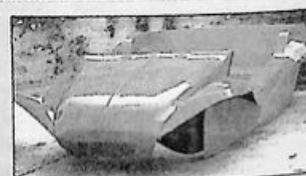


you: *Volkswagen Customs & Classics*. Written and photographed by David A. Fetherston, one of Kit Car's most talented contributors, this 96-page softbound color book traces the history and develop-

ment of the VW from the earliest Beetles in 1935. It also covers an incredibly wide range of variations in body styles (would you believe there's even a Beetle-based RV?). The author is renown for his breathtaking photography, and this book features Fetherston at his best. Published by Motorbooks International, the book sells for \$12.95. Available from Classic Motorbooks, Dept. KC, P.O. Box 1, 729 Prospect Ave., Osceola, WI 54020, 800/826-6600.

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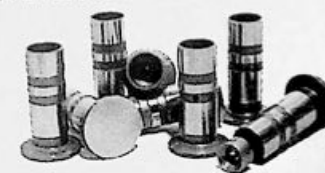
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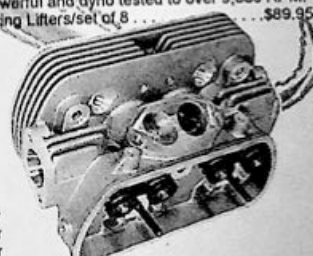
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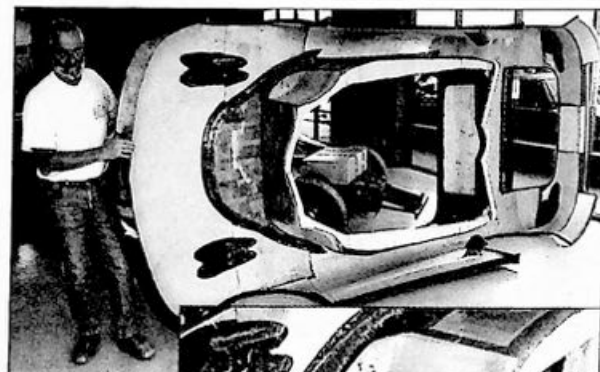


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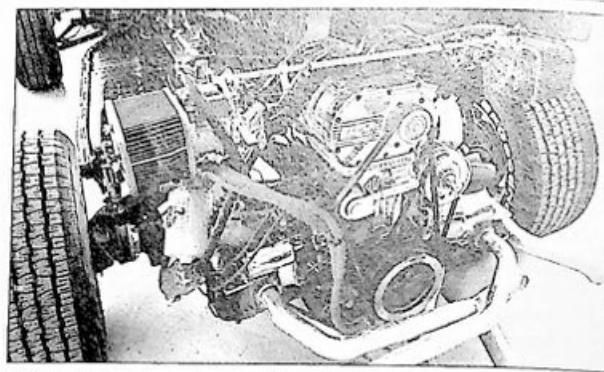
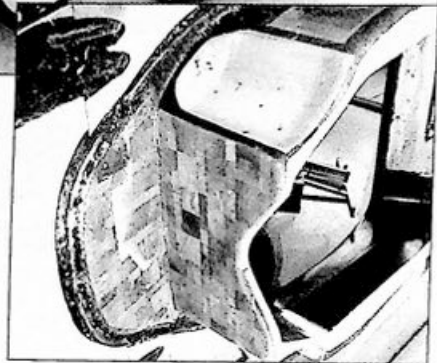
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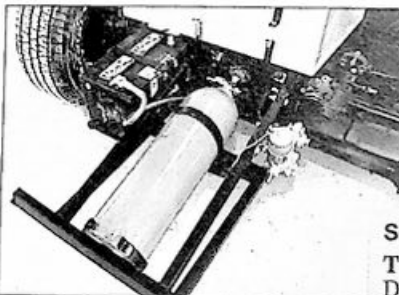
# IT'S A RIOT!



The original design called for a steel subframe to be mounted on the pan, but instead McBurnie added Coremat and balsa wood reinforcements to the layout.



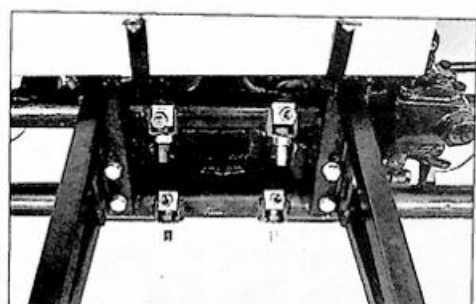
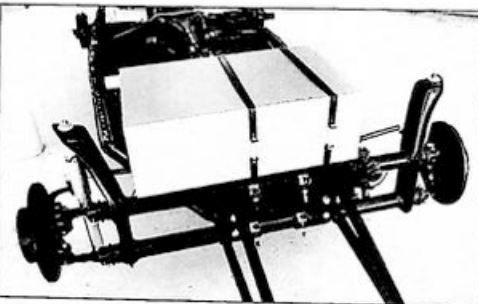
One of the first Riot kits completed will be a full-on hot rod with a blown and nitrous'd VW Type I that's good for more than 360 horses!



## SOURCE

Thunder Ranch  
Dept. KC  
655 Front St.  
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619/444-1006

Thunder Ranch has come up with an innovative way to widen the track and lower the front suspension. The front torsion bars are cut and shortened 2 inches, then 6-inch sections are welded in the middle with adjustable collars. **KC**



## PRO STREET PRO-V

Does your rusted-out Beetle need a new look and attitude? The Pro-V is an innovative package that features a one-piece fiberglass body based on a '62 Bug but with a 4 1/2-inch chop and 3-inch-wide fat fenders. All rain gutters and lines have been removed. The kit includes a reinforced fiberglass floor, and the tubs, firewall and dash are also made of fiberglass. Customers

can choose between standard or suicide doors and a chopped standard or split rear window. And if you're looking for a sleeper to blow away muscle-cars, there's a Pro-V under development that's powered by a Chevy V8 and uses a 2x3-inch rectangular-tube chassis with a Mustang II frontend and a narrowed Ford 9-inch rear end with 13-inch meats on chrome mod rims. The Glass Station, Dept. KC, 1706 La Corta St., Lemon Grove, CA 91945, 619/460-7548.

## BRITISH SPYDERS LAND IN U.S.

Ryan Motors is now the U.S. distributor for the GP Spyder, a replica of the Porsche 718 RSK Spyder manufactured in England by GP Projects ("Easy Money," March '95). The Spyder is available as a basic kit (\$6995), a rolling chassis (\$16,995) or a turn-key car (\$19,995). Ryan



Motors teamed with Headflow Masters for the assembly of the GP Spyder. Headflow has more than 15 years of experience manufacturing street and race cars, building custom chassis and fabricating fiberglass. Ryan Motors also offers performance Type I engines and modified VW pans (the Spyder fits on a shortened VW chassis). Ryan Motors, Dept. KC, 1708 Catalina Ave., Seal Beach, CA 90740, 310/598-3054.

## PRESTO CHANGE-O

With slightly more than the wave of a magic wand, the Wizard Euro-Classic kit can transform any standard Beetle



sedan into a classy convertible. The rustproof fiberglass body is steel-reinforced and features an optional high-gloss color gel-coat. Also available are a flush-folding convertible top, 2+2 or full-4 seating, a removable hardtop and Empi-style wheels. The company claims that the body fits any standard Beetle chassis with no welding or modifications. For the finale, the car can be finished in the original two-tone color scheme and fitted with period-style accessories, such as bumpers, running boards, chrome trim, lights and interior items. The U.S. dealer for Wizard Cars is Domino Cars U.S.A., Dept. KC, 102 New Haven Ave., Milford, CT 06460, 203/878-7352.

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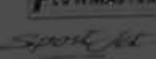
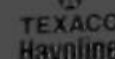
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Origin: KC07



# BUG TRAP



## The Speeder V Snares an Old Friend and Creates a New Look

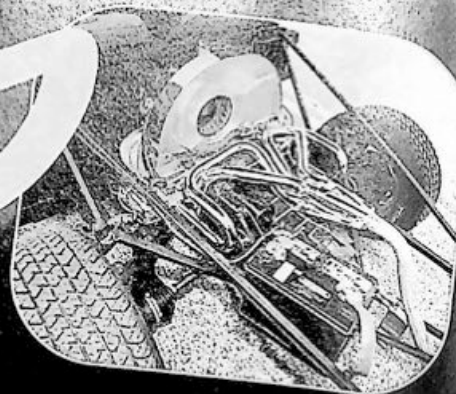


By David Fetherston

Just when we thought the kit car business had modified VW Beetles in every way possible, along comes an entirely new approach. The VW Bug is the donor car that refuses to die, because it's cheap and easy to work on. It comes as no surprise, then, that body kits for VWs are usually aimed at the lower end of the market for folks who want the most bang for the buck along with simplicity of assembly.

One example is the slick-looking little Speeder V fabricated by Fantasy Fabricators. This body kit at first appears to be based on a shortened VW pan—and it will fit on one—but there's more here than meets the eye. The one-piece fiberglass body is hinged at the front, and when you lift up the back end, you'll find a tube-framed chassis with a midmounted VW Type I engine underneath. This surprising twist of engineering is part of the Speeder V's appeal. The one-piece body makes assembly simple, and the tube frame allows the engine to be set amidships for better balance and handling.

Fantasy Fabricators' Paul Hoard is a seasoned car



builder who has built all kinds of buggies during the past 10 years. His family has been in the automotive business since 1941, and at the beginning of 1996, Hoard formed Fantasy Fabricators after he redesigned a kit conceived by another company he worked at. Hoard helped create this earlier kit by splashing the front clip of an early VW and then molding this piece together with a 4-inch channelled body section and widened VW rear fenders. From there, Hoard says he modified the rear section of the original design using a Porsche 911 decklid as the engine cover and vent area.

The chassis is a custom mid-engine design with a ladder frame and a tubular subframe surrounding the cockpit. At the front there's a torsion-bar Karmann Ghia suspension with disc brakes, and at the other end is a '70 VW independent rear suspension with a transaxle that has a flipped ring and pinion. The rolling stock on this Speeder V are 14-inch CWI chrome wheels.

When creating this first version Hoard refreshed everything in the suspension at both ends, and he suggests that all Speeder V builders do the same. The kit requires the steering column to be shortened 2 inches. Another custom item is the Croteau Motorsport shifter which replaces the factory unit.

Powering this Speeder V is a 58hp 1600cc VW Type I flat-four, but many other kinds of engines could be fitted into the chassis, from a four-cylinder Porsche 914 to a water-cooled Subaru to even a six-cylinder Porsche 911. Wiring of the kit is simple, using a NOPI buggy wiring kit, '66 VW headlights and reproduction '39 Ford taillights.

The interior is also simple. It sits in its own bucket, which is attached to the frame and allows the body to lift up. Hoard trimmed this version with '93 Dodge Shadow seats over black carpet, along with VDO instruments in the wood-panel dash and a Grant GT steering wheel. Fantasy Fabricators quotes about 60 hours for assembly time, including body and paint preparation. At only \$3995, the Speeder V is easy to assemble, sports wild looks and, with some extra horsepower, has the ability to turn into a real road-burner. **KC**

### SOURCE

Fantasy Fabricators  
of Southwest Florida Inc.  
Dept. KC  
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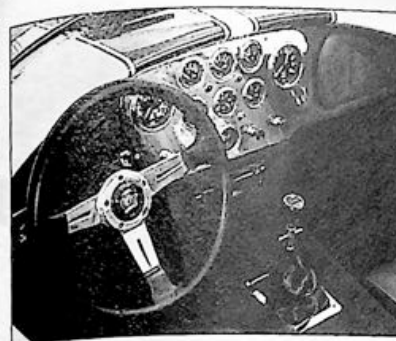
# Physician Thrill Thymself

## One Doctor's Sure Cure for Snakebites

By David Fetherston

They say doctors don't make house calls anymore, but physician Tom Zavitsanos just might make an exception now that he has a Cobra parked in his reserved parking space at the hospital. No anemic Cadillac would do—this Cobra replica is just what the doctor ordered.

Because of his demanding anesthesiology practice, Zavitsanos didn't have time to build this replica kit from Antique & Collectible Autos (A&C), so he enlisted Barry Seel of Custom Roadsters to do the job. Seel is one of A&C's regular assemblers. Dr. Z knew that a big-block was the magic bullet he needed to kill the pain—so he prescribed a polished '65 427 side-oiler. Bob Barbieri at Sport of Kings fortified the side-oiler with LeMans rods and Aries forged pistons in a full race-prepped block, which



he also outfitted with a blueprinted oiling system and a polished steel crank. The heads were reworked for a cleaner flow, and the engine delivers a dyno'd output of 500 hp at 5500 rpm and 490 ft.-lbs of torque at 3800 rpm—good for what ails ya.

Seel used an X-member to reinforce A&C's standard box-tube ladder frame so it could swallow such strong medicine. He also capped the main framersails with 1x2-inch stitch-welded tubular steel. The front suspension is a custom setup with tubular A-arms, Carrera coil-overs, and Mustang II spindles with power rack-and-pinion steering gear. Out back, a narrowed Ford 9-inch rearend with a four-bar setup rides on a set of adjustable Morrison Racing coil-overs. The brakes use ventilated 11-inch Granada rotors in the front and '84 Corvette discs in the rear. The Composite alloy wheels are capped with BFGoodrich T/A radials.

An interesting facet of Dr. Tom's kit is that the brilliant hospital-white tint is actually color gelcoat, and only the blue stripes were painted in Imron. The quality of A&C's gelcoat work is

always pretty amazing—this is just one example of the craftsmanship A&C puts into its products. Dr. Tom definitely didn't need a second opinion when it was time to operate on this Cobra. **KC**

### SOURCES

**Antique & Collectible Autos, Inc.**  
Dept. KC  
35 Dole St.  
Buffalo, NY 14210  
800/245-1310  
716/825-3990

**Custom Roadsters**  
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## 12 Common Engine-Building Mistakes That Will Wreak Havoc on Your Powerplant

**W**ouldn't it be nice to be known as the horsepower guru of your neighborhood? Just think of it, you're the all-knowing teacher of torque who all of the local kit builders turn to when they need to build new engines for their project cars. If Joey needs a new 350hp Ford for his 289 Cobra, you know exactly what parts to buy and how to install them properly to extract every last bit of horsepower possible. Or if your buddy wants to swap in a new solid-lifter cam in place of a hydraulic bumpstick, you know exactly what grind is needed and how to phase it properly in the cylinder block.

Yes, being the ultimate teacher of torque would be nice, but the reality is that most of us are just average folks trying to build a potent powerplant without screwing everything up and blowing the engine to bits. Even if you've built a few engines before, chances are, there are a few more tech tidbits that you wouldn't mind learning rather than falling victim to the big-bang theory. If you stop and think about it, you've probably made a few mistakes in the past and have passed the info along to your friends. And your friends have passed along a few tidbits to you, which continues the cycle of learning that leads to better-performing kit cars nationwide.

Many times, when rebuilding an engine we toss out the old, banged-up O.E.M. timing-chain cover and opt for an aftermarket chrome unit. However, one big difference is most aftermarket timing covers use a bolt-on timing tab in place of the welded-in-place tab used with many of the O.E.M. versions.

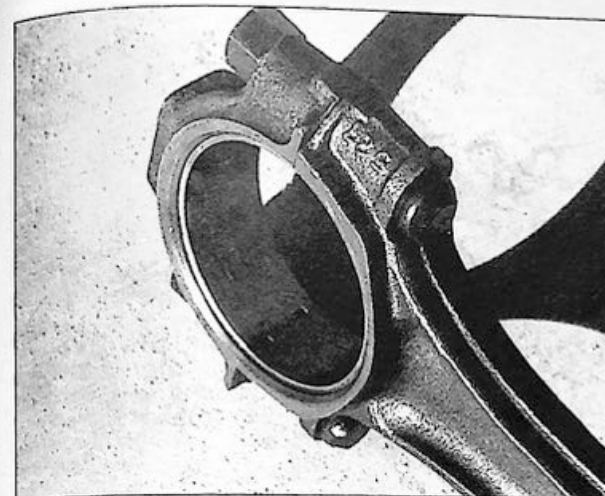
The concept of bolt-on timing tabs is good because you can purchase different tabs to suit a variety of prevailing conditions (such as if you installed a larger harmonic balancer and need a special tab to gain clearance). But here's where the problems occur. Many kit builders purchase the wrong bolt-on timing

tab, which will give a false indication of the timing specs. With the wrong timing tab, you'll set your desired timing advance, but when you fire up the engine, it just doesn't run correctly—it will be sluggish if the timing is too far retarded, or the engine may detonate itself into pieces if the timing is too far advanced. To ensure that you've got the correct timing tab (or that it is bolted on/phased in the proper location), use a deck-height checker to find Top Dead Center for the piston in the No. 1 cylinder. Then, check the orientation of the timing tab to the recessed line on the harmonic balancer. If variations occur, either the timing tab is incorrect or the O.E.M. harmonic balancer's outer inertia ring has moved in relation to the inner hub.

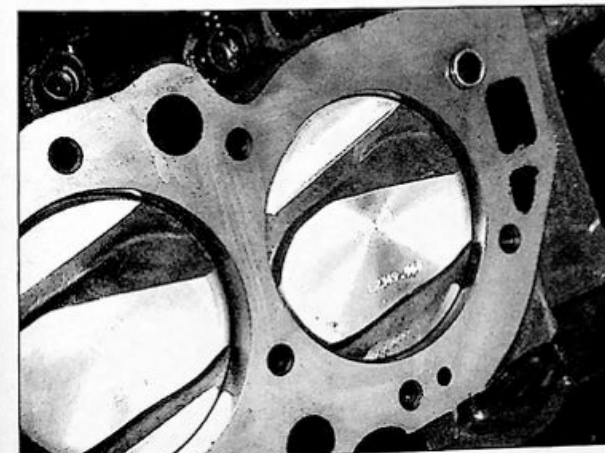
However, what has varied are bolt-hole locations, angles and the presence of (or size of) the heat riser provision(s). Many high-performance kit builders may opt for a gasket without a heat riser (or with a restricted size heat-riser hole) to keep the intake manifold cooler, thus generating more horsepower. The absence of a heat-riser hole doesn't necessarily build greater power. In fact, if you opt to eliminate the passage, the engine may run extremely poorly during conditions and may only run if the engine is hot—not a good comm-town driving. The answer: Guesswork and run the intake as originally designed for your heads and intake manifold.

For most makes of engines, the port configurations of the intake gaskets have remained basically the same over the years.

OK when the engine is hot—not a good combo for around-town driving. The answer: Eliminate the guesswork and run the intake gasket that was originally designed for your type of cylinder heads and intake manifold.



If your buddy tells you the rod bearings can be installed in either direction, don't take the "pro" advice. Rod bearings are designed to run a specific way to provide proper clearance and oiling with the crankshaft. Installing the rod bearings in the wrong direction will in many cases bring the bearing into contact with the crankshaft journal (just like a spun rod bearing) and could cause interference with the side of its paired rod. In addition, on many older-style rods with a camshaft oiling "spit hole," if the rod bearings are in backward, the spit hole will be blocked and the camshaft won't get its full dose of lubrication. On this small-block Chevy rod (*pictured*), the "tangs" on the rod bearings are properly positioned on the side of the rod that faces away from the camshaft. For specifics on your make of engine, consult your service manual. If you don't have such a manual, then get one. It is an invaluable source for engine-building specs.



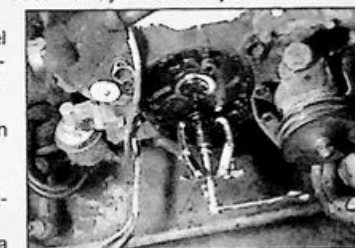
On most V8 engines, the connecting rod is designed to run in a specific direction to achieve proper side clearance with its neighboring rod (the rod it's paired with on the same crank journal). In some instances (such as with some small-block pistons with four valve reliefs), the piston can be installed either way. But when you run pop-up pistons and/or pistons that work with canted valvetrains (such as with big-block Chevy and Cleveland-style Fords), the pistons must be properly oriented or piston-to-valve interference will occur. With a traditional in-line valvetrain (as with small-block Chevys, Mopars and Windsor-style Fords), if the piston has two equal-looking valve reliefs, usually the reliefs face upward to provide clearance for the cylinder head's intake and exhaust valves. If after mocking up the engine you find that the valve reliefs are in the incorrect location, check to make sure that you've got the piston/rod combo on the correct bank (side) of the engine, and if so, check to make sure the chamfered edge of the rod is not positioned next to the neighboring rod (the chamfered edges should face outward).



Because there is usually a slight amount of cylinder pressure leakage past the end gaps of traditional piston rings, it's important to properly phase the compression and oil rings before

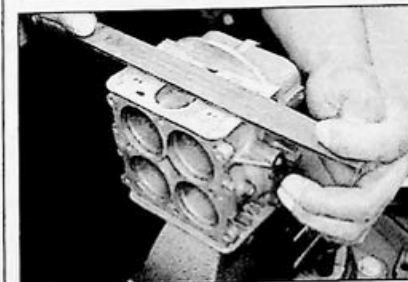
installing the rod/piston combo. Usually, contained within the box in which the rings were shipped, there is an instruction sheet that indicates the manufacturer's recommendations for preferred ring phasing. If no such instruction sheet is included, be sure to phase the rings about 33 degrees apart. Or, at the very least, phase the two compression-ring end gaps opposite from each other. If you phase the gaps on two compression rings and the oil rings line up as shown in the photo, you'll likely be in for big trouble due to excessive ring blow-by.

On most engines, the lower timing-chain gear is press-fit onto the end of the crankshaft snout. Removing the old gear can be challenging if you don't have the correct tools. One removal method that we do not recommend is using a chisel and hammer to crack or break the gear. While the chisel method does work, you can easily bend the end of the crankshaft or gouge the crankshaft snout as the chisel cuts through the gear. To properly remove the lower timing-chain gear, you should use a three-fingered removal tool as shown in the photo. The removal tool is inexpensive (about \$10 to \$20) and can sometimes even be rented from an auto parts store.



When it comes time to install a new lower gear on the crankshaft, rather than trying to pound the gear into place (the gear is a tight press-fit) and damaging the crank or gear in the process, try the following trick: Put the crankshaft in a cool place for about an hour or so (put in a cold garage or even in the refrigerator). Meanwhile, put the new lower timing-chain gear in the oven and heat it up to about 300 to 400 degrees F. Then, with a pair of leather gloves, place the hot timing gear on the cold crankshaft end snout, and the gear will drop right into place without any pounding or hammering. Voilà, you're done.

You've just finished the buildup on your new project car engine and are about to cap it off with a freshly rebuilt Holley four-barrel car-



smooth out any high or low spots. As a result of filing, hundreds of tiny metal slivers will build up and find their way into the metering passages of the carb. If you don't remove all traces of the filings, you may experience weird idle characteristics when you go to fire up the engine. In fact, depending on which (or how many) of the passages are partially blocked, you can severely lean out the engine, which can lead to warped valves, melted pistons and other unwanted nasties. To remedy this, be sure to use compressed air to thoroughly clean out all of the passages in the carb and metering blocks. Then, give the entire carb a bath with carb and choke cleaner.





# DOWN MEXICO WAY

By Joe Greeves & Doug Bohannon

As if racing weren't challenging enough by itself, imagine a seven-day event where you drive well over 100 mph on public roads damaged by earthquakes and clogged with 18-wheelers, wandering livestock and armed bandits. Sound like some addled racer's feverish nightmare? Well, welcome to Mexico, because that's exactly what the La Carrera Panamericana race is all about. This legendary 1965-mile race starts at Tuxtla Gutiérrez and runs a winding, mostly northward course through Mexico City and eventually ends in Nuevo Laredo near the Texas border—if you make it. Every year, dozens of cars litter the rocky, pock-marked course, victims not only of mechanical problems and driver error but also all manner of unpredictable hazards. This is the type of event Doug Bohannon has always been drawn to, the kind he had to attempt in his replica D-Type Jaguar. He has been involved with high-speed cars and motorcycles since he was 16, and after crewing for an IMSA GT-1 and later an SCCA Trans Am, he decided to take things a step further. Vintage racing had speed, excitement and the connection to the glorious legends of the past. Bohannon had the talent and desire to get involved. All he needed was the car.

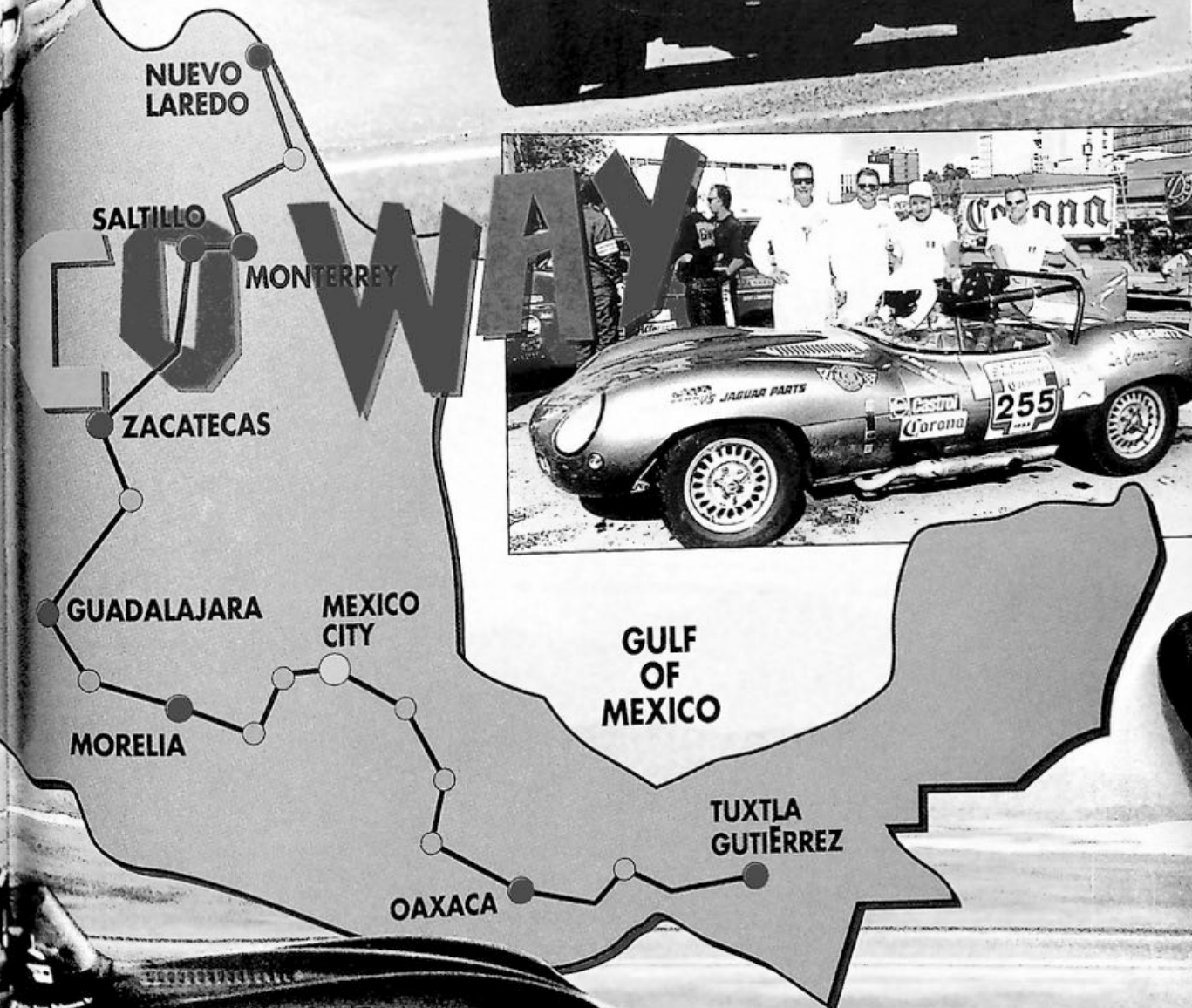


body style and the integrated headrest/fin. Working at the Predator plant, Bohannon added a '74 XJ-12 suspension and installed the Predator-built 275hp, 4.2-liter DOHC six engine, complete with three Weber carbs and backed up by a T5 tranny. The rest of the details, such as the fuel tank, instrument panel, wiring, windshield, doors, trunk, seats and seatbelts were installed during a period of 14 months. Once the car was completed, Larry Ligas of Predator sprayed it with Deltron Green Metallic.

In 1992, the finished car was great

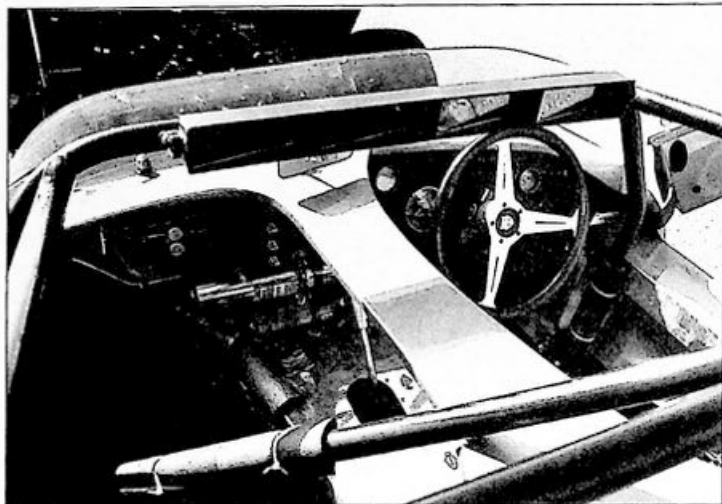


One Man's Jaguar Adventure in One of the World's Most Challenging Road Races





fun to drive, and Bohannon and his wife Justine regularly used the Jag as transportation to car shows and racing events around Florida and Georgia. But the idea of actual-

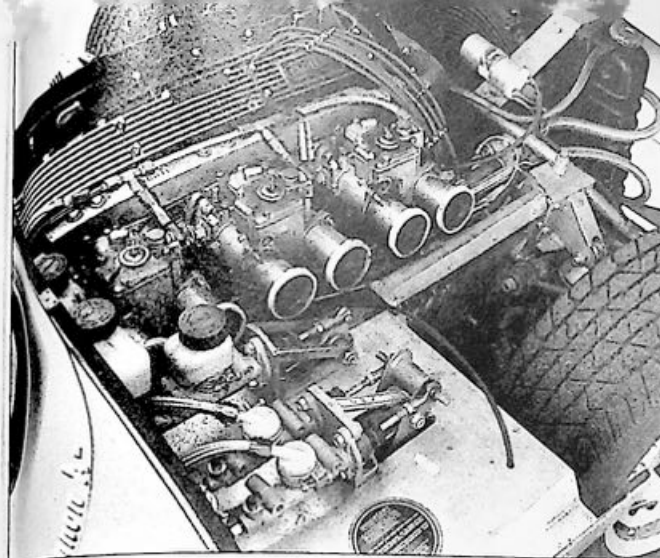


The cockpit treatment required taking a few liberties with authenticity for the sake of racing safety.

ly racing the car continued to grow stronger, and in August 1995, Bohannon switched gears and embarked on a new adventure for the D-Type. Having already attended the racing school at Daytona and competed on the roadcourse at Sebring, he decided he would enter the Jag in La Carrera Panamericana.

To comply with the rules of this FIA-sanctioned event, Bohannon had to remove the entire cockpit to install a rollover cage, a fire extinguisher system, a 22-gallon fuel cell, and a five-point safety harness for the driver and navigator. Work on the mandatory additions was completed the very day the team had to leave for Mexico! With navigator J. Allen Black and service vehicle driver John Parker, the newly formed Predator Racing team set out to test themselves and the racing heritage of their modern/vintage Jag. Excerpts from their race log tell the story best (see accompanying box).

What's in store for Bohannon's race-proven Jag? While he's toying with making another run for the '96 Panamericana which starts October 25, plans are also underway for an assault on the sports car class record at Bonneville, where the D-Type will have to exceed 170 mph to make it into the books. Making



aerodynamic changes, eliminating extra weight and building a 15:1 motor are currently consuming all of Bohannon's spare time, along with finding race sponsors (he can be reached at 941/293-5335). One thing's for sure—on the Salt Flats he won't have to worry about running into any burros or banditos. **KC**



#### SOURCES

**La Carrera Panamericana**  
Contact: Loyal Truesdale  
Dept. KC  
P.O. Box 1605  
Studio City, CA 91614-0605  
213/464-5720

**Predator Performance**  
Dept. KC  
12280 75th St.  
North Largo, FL 34643  
813/539-0218

Even though the engine was essentially a stock 4.2-liter six-cylinder Jaguar, it ran flawlessly for the duration of the grueling seven-day race.

### THE LOGBOOK OF THE BOHANNON D-TYPE

**Sunday, Oct. 22-23.**  
**Trailing the D-Type**  
**from Mexico City to**  
**Tuxtla Gutiérrez.**

Driving through Mexico City was insane. My trailer was often wider than the road, and people were trying to pass us on both sides. At one part of the highway, the trailer fender was brushing a guardrail on one side and a VW van on the other. We finally had to run down the center of two lanes, and people were still trying to pass us. We stopped to help another rally driver who was being detained by a Mexico City traffic cop who wanted a bribe. They finally settled on \$30—corruption is still a serious problem in Mexico City. The roads were in very poor condition from earthquake damage. North of Tuxtla Gutiérrez, both lanes of the road had fallen off the mountainside, leaving a cliff with a several-hundred-foot drop. A road repair crew had carved a 12-foot-wide notch into the mountain to pass the missing roadway. We also crossed many large topos, Mexican speed bumps. I hope this is not the same route for the rally.

**Thursday, Oct. 26.**  
**Tuxtla Gutiérrez.**

A Studebaker team rolled its car while testing the brakes, but it was not seriously damaged and will start tomorrow. We met some of the other teams. The D-Type was running great and everything checked out OK. At the drivers' meeting, we learned that the Mexican Highway Patrol is an event sponsor. What this means to the drivers is that any car entered in the rally and properly marked can ignore the speed limits and traffic signals throughout the race as long as it doesn't get involved in an accident with a Mexican citizen. A dream come true! There are more than 80 cars entered, including two Jaguar XK120s painted red and carrying Highlander markings. These cars are being videotaped by a camera crew for the Highlander TV series. Adrian Paul, the star of the show, will fly into Mexico City and drive one of the XK120s for a short time. We are going to bed early to rest up before the start.

**Friday, Oct. 27.**  
**Tuxtla Gutiérrez to Oaxaca.**

Thirty minutes into the race, we passed a car upside down in the road. Five minutes after that, we saw a car that had skidded off the road and over a cliff. We didn't hear anything about the condition of the drivers. Unfortunately, the rally course is the same road we came in on—topes and all. We encountered some very rough driving with many potholes and bumps, including the missing section of road on a cliff. During one of the velocity runs, we hit a rough section of road in the mountains which caused us to slide sideways around a curve with a Bentley on our tail. I was able to recover, but the car was listing to the right. Not only was a shock-absorber mount bent, but also the skid-plate was flattened out and the aluminum oil pan was broken. Our service vehicle picked us up, and we arrived at Oaxaca at midnight. Working 'til 5:30 a.m., we straightened the shock mount, epoxied the pan and repaired and reinforced the plate. After less than two hours sleep, we were back in the D-Type by 7:30 a.m. for the next day of driving.

**Saturday, Oct. 28.**  
**Oaxaca to Mexico City.**

Back in the race, but behind on time, we passed a patrol car chasing another vehicle on the highway. He waved as we went by. We rarely dropped below 100 mph on the highways.



Doug Bohannon says the Panamericana was the experience of a lifetime, and he wants another go at it.

**Sunday, Oct. 29.**  
**Mexico City to Morelia.**

We drove at altitudes of more than 10,000 feet, and the engine lost power noticeably. The velocities were run on winding roads in heavily forested areas. Each curve was blind, and the guidebook was the only thing we had to tell us what the road conditions were like. One of the race cars hit a donkey in the road. The car survived, but the donkey didn't. It's not uncommon to find livestock and dogs on the road. The Studebaker that rolled the first day blew its engine, as did its tow vehicle, which was hit by a semi. One of the Studebaker team members rode with us. He speaks Spanish fluently and helped John [Parker] drive and repair my service vehicle. Several trailers and some tow vehicles were hit or had near misses with semis. Their drivers do not seem to care if they hit our equipment and may even be doing the damage on purpose. Of course, the semi drivers never stop after hitting someone.

**Monday, Oct. 30.**  
**Morelia to Guadalajara.**

We had another good day. The Aston Martin team driver told us that he was doing 135 when we blew by him. We hit 145 mph several times. On the first velocity, we passed an Alfa Romeo stuck in a wall, and the driver had broken his leg. On the second velocity we rounded a blind curve and came upon two horses in the road. I hammered the brakes hard and blew the horn. Fortunately the horses froze, allowing me to maneuver around them. I don't think the D-Type would survive an impact with a horse.

**Tuesday, Oct. 31.**  
**Guadalajara to Zacatecas.**

I cracked the oil pan again in one of the curves where I was starting to drift and hit some potholes. When we arrived in the town of Tepetitlan de Morelos, I noticed we were dumping oil on the road. The town had a celebration going on and was packed with people. The mayor gave each of the drivers a certificate and a free lunch. A local mechanic

epoxied the new cracks in the oil pan for us and got us back on track very quickly. We were only about a half hour behind and caught up to the rest of the rally cars by the next town. Throughout the rally, the smaller towns have had the largest receptions, and they treat us like celebrities. On the way to Zacatecas we passed another upside-down car and also saw two others that had skidded off a cliff. Zacatecas is a beautiful town, with old buildings, ornate churches and winding cobblestone streets. The entire town threw a huge party for the drivers and crews, but I was busy repairing the D-Type and was unable to attend.

**Wednesday, Nov. 1.**  
**Zacatecas to Monterrey.**

Today I passed three cars on the last velocity. We worked our way up to fourth position in our class. We had to detour around Saltillo—the town was closed because of a gun battle! The Jag is now losing about a quart of oil every 2 hours.

**Thursday, Nov. 2.**  
**Monterrey to Nuevo Laredo.**

Today was the last day of the rally. Instead of missing time for repairs, I decided not to patch the oil pan again and instead carried several quarts of oil to add at every opportunity. We did very well on the first two velocities, but the oil was at more than 240 degrees and started breaking down. I backed off to allow it to cool down. My first priority was to finish the rally. Many cars were broken down on the side of the road today because their drivers pushed too hard. We completed the race, finishing fifth in our class. I think we left an oil slick for the last 600 miles, but the stock 4.2-liter Jaguar engine ran strong and flawlessly through the entire event. The final banquet was held at a private bull ring and restaurant. The race organizers told us no one was killed during the race, but more than 30 cars did not finish. We never heard the fate of more than half of them. The rest of the ride home to Florida was uneventful, but for several days I lay awake in the middle of the night wondering what city in Mexico I was in.

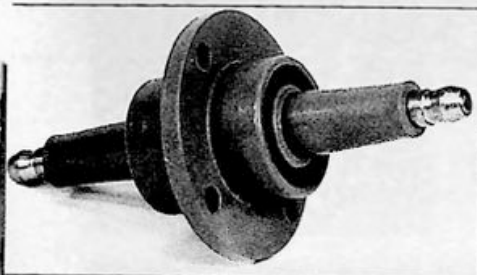


# Light My Fire

## Ignition Parts Buyers' Guide

Our bespectacled researchers in white lab coats tell us that among kit car builders and enthusiasts, ignition system parts are the most sought-after products. That really doesn't come as much of a surprise—if you can't get your kit car started, it ain't a whole lotta fun, is it?

(Granted, your project car might be nice to look at when it's sitting still, but so is a new set of patio furniture, which costs a bunch less and is a whole lot easier to assemble.) So what you really need are the right ignition parts to make sure your project is more than automotive sculpture. For those seeking some high-voltage excitement, look no further. These components will spark you right up.



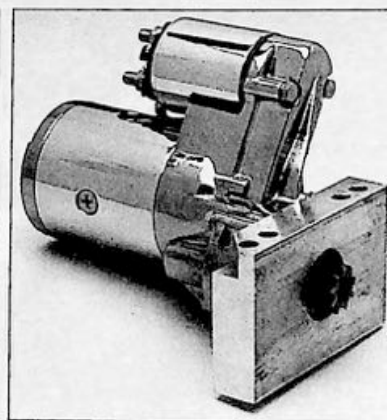
### FEED ME

Is your engine compartment's wiring starting to look like a plate of spaghetti? MSD's Firewall Feed-Thru lets you mount the coil away from the heat and moisture of the engine bay for a clean-looking installation. Molded from durable Rynite, this handy product has a high-tension tower on each side and mounts in a 1-inch hole in the firewall to provide a sure path for high-voltage sparks. MSD Ignition, Dept. KC, 1490 Henry Brennan Dr., El Paso, TX 79936, 915/857-5200.



### MAKING CONNECTIONS

Simply wave a key like a magic wand, and presto, it's instant on or off for your battery connection. StreetWorks' MagTech Battery Disconnect uses a hidden switch activated by a small magnetic key. The device is designed to be a theft deterrent and also to prevent battery drain. Of special interest to kit builders is that it works through fiberglass but not through steel. StreetWorks, Dept. KC, P.O. Box 270, Bozrah, CT 06334, 860/859-0513.

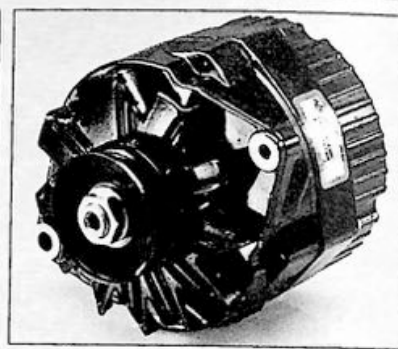


### GETTING STARTED

Ron Francis' Wire Works has added a new GM chrome starter to its line of electrical components. The company claims the unit's small size and high torque provide plenty of consistent, reliable cranking power even with high-compression engines. This starter is designed to fit GM 153- and 168-tooth flywheels. Ron Francis' Wire Works, Dept. KC, 167 Keystone Rd., Chester, PA 19013, 800/292-1940, 610/485-1981.

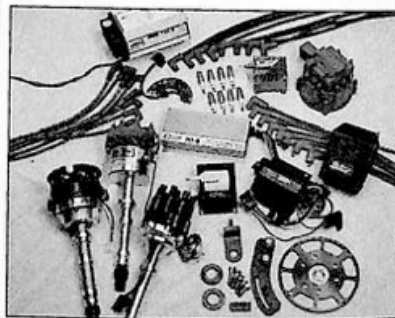
### PROMASTER THE POSSIBILITIES

Designed for today's specialized ignition systems, the Promaster Coil from Mallory Ignition features faster rise time and longer spark duration for increased performance. The glass-filled polyester case uses oil-filled construction for increased durability and to eliminate energy losses due to arcing. Mallory, Inc., Dept. KC, 550 Mallory Way, Carson City, NV 89701, 702/882-6600.



### ONE-WIRE ALTERNATIVE

Clean up your kit car's underhood appearance with an ACCEL 12-volt racing alternator. Built with a load-sensing internal regulator, these units provide 80amp output through a one-wire system and weigh only 8 pounds. The heavy-duty design includes dual internal fans, external brushes and large in-board bearings. ACCEL, Dept. KC, 8700 Brookpark Rd., Cleveland, OH 44129, 216/398-8300.

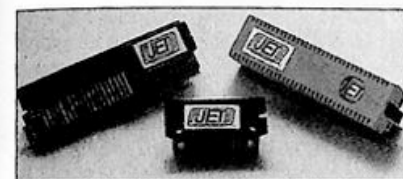
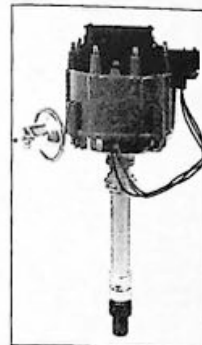


### JEG'S MAIL ORDER

Jeg's High Performance Mail Order offers a large selection of ignition components and accessories from various manufacturers, including ACCEL, Crane, Mallory, MSD and Turbo Start Batteries. Technicians are also on hand 24 hours a day, seven days a week, to answer your questions. Jeg's High Performance, Dept. KC, 751 E. 11th Ave., Columbus, OH 43211, 800/345-4545.

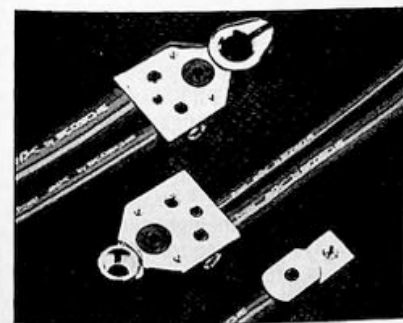
## HEI PERFORMANCE

The Carburetor Shop offers three stages of upgrades for GM HEI ignition systems. The stages range from mild street to full race use. The modifications include an adjustable vacuum advance mechanism, a special recurve and a high-output coil. The Carburetor Shop, Dept. KC, 8460 Red Oak St., Rancho Cucamonga, CA 91730, 909/481-5816.



### JET SET

The complete line of Jones Electronic Technologies (JET) performance chips is designed and engineered for improved performance from low-end to wide-open throttle. Each chip includes modified fuel and ignition curves along with modified transmission shift parameters to improve shift quality in new electronic automatic transmissions. Jones Electronic Technologies, Dept. KC, 17491 Apex Cir., Huntington Beach, CA 92647, 714/848-5515.



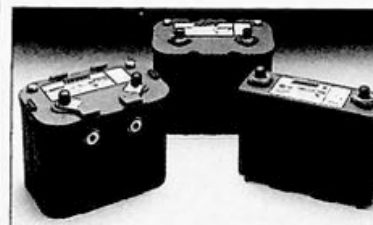
### GET CONNECTED

A new terminal design from Scosche makes battery hookups easy. The Battery Connection System consists of a terminal and block that interlink with one Allen screw, allowing disconnection in less than a minute. Each set is 24K-gold-plated and comes in either universal or GM side-post styles. Scosche Industries, Dept. KC, 5160 Gabbert Rd., P.O. Box 8099, Moorpark, CA 93020-8099, 800/621-3695.



### MULTIPLE SPARK

Claiming better performance, improved gas mileage and quicker throttle response, the MSD 6 Series ignition control box is another one of today's "smart" ignition systems. Using multiple-spark discharges and longer spark duration, the system is ideal for street or strip applications. For more information, contact Autotronic Controls Corp., Dept. KC, 1490 Henry Brennan Dr., El Paso, TX 79936, 915/857-5200.



### OPTIMAL BATTERY

Optima Batteries uses a sealed, starved-electrolyte, gas-recombination design that does not need water added for the life of the battery. In addition, the batteries provide 800 cold-cranking amps, a 120-minute reserve capacity and a significantly shorter recharge time than other batteries. Optima Batteries, Inc., Dept. KC, 5 E. Mississippi Ave., Denver, CO 80210, 303/744-5360.

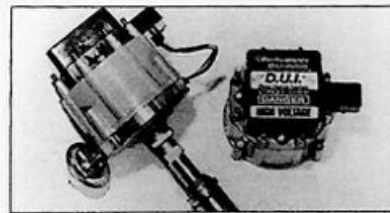
### WIRED CHEVYS

Moroso has expanded its line of Blue Max Spiral Core spark plug wires to include race sets specially terminated for small- and big-block Chevy engines with HEI-style distributors. The sets can be routed under the headers or over the valve covers, are cut to the correct length and use stainless-steel terminals for maximum spark. Moroso Performance Products, Inc., Dept. KC, P.O. Box 1470, Guilford, CT 06437-0570, 203/453-6571.



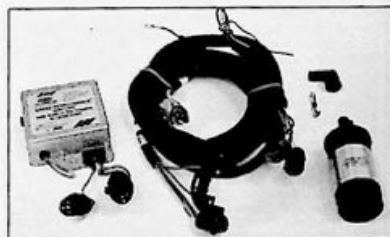
### PAINLESS STARTING

The Hot Shot Plus from Painless Wiring boosts amperage to your starter solenoid for extra cranking power. The 30amp, heavy-duty relay and circuit breaker work on GM-style starters to help get that high-compression performance motor spinning. The kit includes all mounting hardware and easy-to-follow instructions. Painless Wiring, Dept. KC, 9505 Santa Paula Dr., Fort Worth, TX 76116-5929, 817/244-6898.



### ONE-PIECE PERFORMANCE

Performance Distributors offers a new one-piece ignition system for Fords. The high-output coil and module mount inside the distributor and are virtually water, mud and vibration proof. A smooth advance curve provides better throttle response while eliminating predetonation. Performance Distributors, Dept. KC, 2699 Barris Dr., Memphis, TN 38132, 901/396-5782.



### EXTRA PERFORMANCE

Ford Motorsport has a complete ignition system built to meet the heat, temperature, shock and vibration requirements of high-performance applications. The Extra Performance ignition system includes a race-quality harness, high-energy coil and computer control module. Ford Motorsport, Dept. KC, 44050 N. Groesbeck Hwy., Clinton Township, MI 48036-1108, 313/337-1356. **KC**



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# KIT TECH

By Jim Youngs

## Facelift

I have a '77 Porsche 924 automatic. In itself it is a fine automobile, but it's in need of a facelift and engine work because of its age and mileage (106,000 miles). I was interested to find in the article "50+ Buildup Tips" (January '95) an item called "Squeeze Play" concerning adding body panels to a donor car. It shows a 924 being rebodied as a 944 with an interesting rear section. I would be very interested in gaining more information on the body panels. Could you please assist? I am also looking to get more power out of the car's engine. If you have any information on turbos, engine rebuilds, cams or superchargers, I would be grateful. I realize the 924 is not exactly your run-of-the-mill donor car and parts would be hard to come by as well as expensive.

Scott Gray  
Peaskill, NY

We don't discount any car as a donor these days, Scott. The car you are referring to was a project of Renegade



Motorsports (909/307-2150), Porsche engine-swap specialists. That vehicle actually had a Chevy 4.3-liter V6 installation, but Renegade also has put a 350 Chevy in the 924. For details on the rebody project, see "Primo Porsches" and "Bulking Up" (September '93). For reprints send \$5 to Kit Car, 6420 Wilshire Blvd., Los Angeles, CA 90048. The rebody kit was from Infinite Fiberworks (614/949-2311).

## Best Buys?

When I was reading your magazine recently, I saw an article about a replica that looked like the Lamborghini Diablo. In fact, two articles in that issue caught my attention, the other was the story about a Viper replica. Can you help me find out what is the best replica for those two cars? If that is not possible, please tell me who can provide such information, other than the manufacturers. I also have a suggestion. When you give information about a replica it would be much better if you gave it in the form of a table comparing the replica's dimensions, speed and accuracy to the original product's on a scale of 1 to 10, including the price.

Noumay Ali Reda  
Longwood, FL

I am writing to ask your expert opinion on which company I should purchase a kit from. What I am looking for is a replica of the Lambo Countach. I would like this kit as a convertible. I own an '84 Fiero and want to build a kit, but it is very difficult for me to choose the right kit because of the great distances. I need your help. In a recent issue, I noticed that D&R Replicas and Exotic Enterprises have what I want. They may not be the right choice for me, that's why I am asking for your help. I would like a realistic kit.

Michael Shaw  
Ontario, Canada

We'd like to help you guys (and all the other readers with similar requests), but you are going to have to do some homework and legwork. In many cases, our involvement with certain kits is limited to photographing complete cars, shop tours and buildup stories. We can't possibly build all of the kit cars around, as much fun as that may sound. With those that we do build, there's no problem in relating relevant information to our readers.

Perhaps the best way to gain the insight you seek is to contact a local kit car club ("Join the Club," May '95) or ask the manufacturer for several customer phone numbers so that you can question those who actually went through the building process. It might also be helpful to consult with professional assemblers who have built the car you're considering. Visit the factory to see just how careful and skillful the manufacturer really is (we feel a buildup budget should include some travel expenses, and sometimes a manufacturer will pay your way if you end up buying that company's kit). Ask the hard questions to determine if there are any procedures you might not be able to handle yourself, then determine if someone in your area can help with these.

Finding the right kit project may take much more than just reading our stories and looking at photos in a brochure. As for rating the kits, it's an idea we've considered, but the problem is, one person's meat may be another's poison. Also, many kit builders customize a replica so it ends up closer to the original or reflecting their unique personal tastes. That's the whole point of a project—having it your way.

## Rebody Registration

I have been a Kit Car reader since its beginning in 1982. I have boxes and boxes of magazines! I have an '86 EXP rollover with the 1.9 High Output engine. The drivetrain is still in great shape, so I am going to remove the body, reinforce the chassis and add a rollcage, then top it off with a custom fiberglass body. I live in Oklahoma, and I am not sure if it would be licensed and registered as a Ford, a kit car or a homebuilt vehicle. Can you help me? Can I use the Ford VIN (Vehicle Identification Number) and title, or will I need to re-title it? Thanks guys for all your help. Keep putting out a great magazine. Petersen Publishing rules!

Robert Savage  
Marietta, OK

Each state has a slightly different interpretation of the registration definitions, so you should check with the Oklahoma motor vehicle department for exact procedures. Generally speaking, however, if you are just adding a new body to a vehicle for which you have the title and registration, the vehicle retains the donor car title and VIN numbers. Some states require that you get a new assigned VIN from the state that reflects the new body. Having a clear title in this case makes the procedure much easier. In still other states you are required to register as a kit or homebuilt regardless of what you've

done to the car. One other thing to consider is that if you register a vehicle as a new vehicle, kit or otherwise, in those states with emissions requirements, you may have to pass emissions testing for the current year. In Colorado, for example, we had to get an assigned VIN and register the car as a '95 kit car. But, because we had a legitimate '77 title for the chassis and drivetrain, we only had to pass emissions for 1977. Whew!

## Bradley Fan

I am 29 years old and work as an

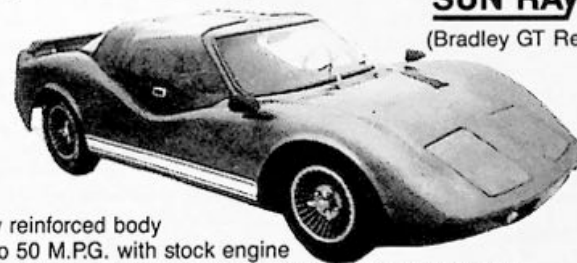
ASE master tech at a company that builds specialty vehicles for the handicapped. I really want to build a kit car, so I decided on the Bradley GT replica from Sun Ray. As a youngster, I saw ads for the Bradley in magazines. I am amazed to see it's still around, which is one of the reasons I chose this kit. I have Kit Car magazines dating back to July 1987, but out of all the buyers' guides, I've never seen the Bradley. Why not? This kit is still in production, yet the buyers' guides are always 90 percent new companies. What I would like to see is a Bradley package coverage or

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## KIT TECH

buildup in a future issue. Please remember that not all of your readers can afford an Evans Series II LM at \$250,000. So think of us as people who also want to be in the kit car scene. By the way, in the January '96 issue under "Manx Mystery" in Mailbox, Bill Schwing of Bethpage, New York, was looking for Manx Motors. Fiber-Tech is currently advertising bodies from Manx Motors. The address and phone number are: 10809 Prospect Ave., Santee, CA 92071, 619/448-0221.

Henry Eschmann  
Palmdale, CA

Generally speaking, the buyers' guides we run require the manufacturer to fill out a form and send in photos, and so far Sun Ray has declined to do so. We also have requested to arrange a photo shoot of either a demo car or a customer's project, but nothing has materialized. Automotive archaeologist Harold Pace, who writes our Kit Car archives column, is researching the Bradley for an upcoming issue, so stay tuned. The Sun Ray GT (612/780-0774) replica of the Bradley is certainly a cool-looking little car and, to be sure, is a bargain at \$1495 for the body package.

### Corvette Query

I've noticed a couple of 'Vettes in your magazine. I'm looking to purchase a '63-'67 Sting Ray kit or a Gran Sport kit soon. Perhaps you could recommend a couple of companies for me to look into. The only ones I've read about are D&D Corvette, Pro-Chassis and Country Classics.

Emerson Stitt  
Sheridan, OR

The only Sting Ray manufacturers we know of are Nice Car Company (800/753-4158), U.S. Body Source (904/468-2203) and Country Classics (218/739-9235). As for Gran Sports, contact D&D Corvette (330/745-2544) and Mid America Industries (309/787-5119). By the way, if you are also interested in even older Corvettes, contact CC Industries (616/426-3342) regarding its Concept '57 kit.

Having a technical problem assembling your kit? Send your questions to Kit Tech, Kit Car, 6420 Wilshire Blvd., Los Angeles, CA 90048-5515. (No phone calls please. We're sorry, but we are unable to respond directly to inquiries.)



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### Contacting Editors

On all correspondence, be sure to include your name, address and phone number. Send your letters to: The Editors, KIT CAR, 6420 Wilshire Blvd., Los Angeles, CA 90048-5515. Or call: 1-(213)-782-2605 (call between 9:00 am and 4:30 pm PST). All materials sent to the editors will become the property of KIT CAR and cannot be returned.

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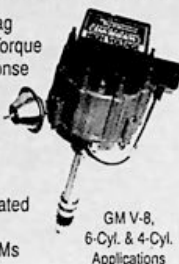
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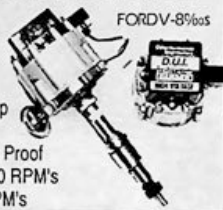
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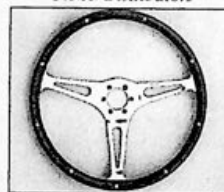


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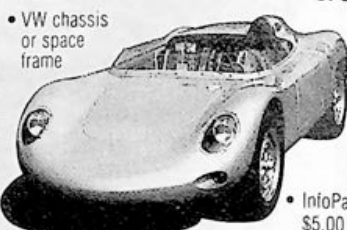
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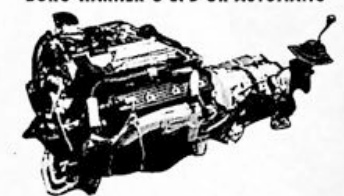
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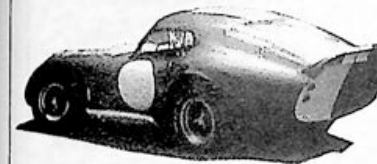
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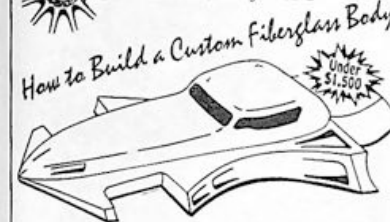
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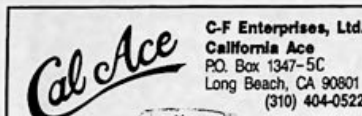
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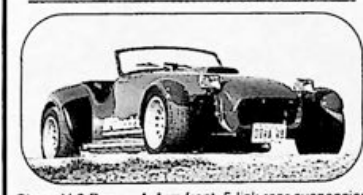
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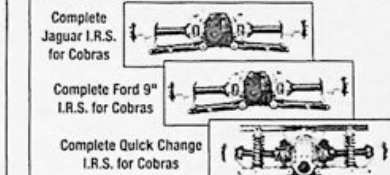
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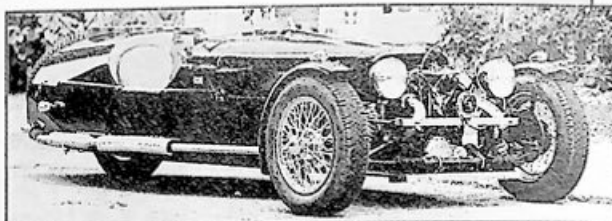
# SHOW-OFF



## ENZO'S REAL RIDE

My first major decision in building my kit car was choosing the right manufacturer. During my initial inquiries, I made phone calls to several companies, and Everett-Morrison was always helpful, courteous and professional. Likewise, engine builder Lyman White Automotive in Ft. Lauderdale, Florida, was always helpful. I decided then to not just put the kit together but to dedicate the extra hundreds of hours to make the car extraordinary. It took patience, patience and more patience, but the extra effort paid off. Even though it sounds like bragging, in all the car shows I've gone to, I've never seen another Cobra with so much detail. It's a lot of fun sitting at a car show and hearing people tell their friends that my car is an original Cobra.

Enzo Alibrandi  
Pembroke Pines, FL



## NO REGRETS

I obtained a three-wheeler kit from Beribo Replica Automobiles in Doncaster in the United Kingdom. The beautiful and well-made kit requires few modifications to get it on the road. I added hydraulic actuation of the rear drum brake and a 12-volt winch chain coupled to the driveshaft for use as Reverse. The power is from an '83 65hp Honda CX-650. Your article on bump steer (May '95) was invaluable in correcting erratic steering in my initial outings. The car is a retro-style machine that's made to enjoy countryside driving at 50 mph max. The power is there to take it over 80 mph, but the handling is too nervous. The initial cost of all the parts and shipping was \$6000, but the total cost rose to \$12,000 (U.S. dollars) by the time I added chrome wire wheels, tires, 12-volt winch, the engine, brakes and miscellaneous items. Even with the extra expenses, I now have a really unique car and no regrets!

Pierre Beauchemin  
Boucherville, Quebec  
Canada



## ABC Z-CAR

One look at a picture of the Tomahawk kit for Datsun Z-cars knocked my socks off ("The Price Is Right," May '95 and "Snakeskin Z-Car," March '96). I just had to have one! After a visit to Rory Bateman of Native American Craftsman, I began my project. He did an excellent job of fitting my donor car to the body. Next came the mechanical goodies. The suspension and steering we've improved with a Hollywood Z unibody suspension, a urethane coupler and rack bushings for the steering, and new struts and Tokiko springs to lower the car. I'm staying with the stock engine for now, but the handling is excellent. With a candy-apple and purple paint job, my Tomahawk Z is a real head-turner. The license plate reads "1 XTA Z." Translation: One Ecstasy—that's what I feel when driving this car.

Vincent D. Hudson  
Hayward, CA

## HOMEBODY

My first home-crafted car was built not using a kit but by purchasing a \$5 how-to book called *Now I've Got a Volkswagen, What Do I Do Next?* After acquiring a \$90 '62 VW chassis and adding another \$1500, voilà—the Bogus Bug was born. Later, after seeing a rendition of a '28 Mercedes SSK and some photos of an Excaliber, I made molds for my own '28 Mercedes SSK. Kit Car magazine described in detail how to make a mold and how to work with resin and fiberglass; also, my local supplier was most helpful. After almost a year of molding, sanding and painting, I threw away the old Bogus Bug body and refitted my fiberglass sections to the chassis of a '67 VW. No, it's not a kit, but it is a pretty good replica.

David T. Smith  
Tucson, AZ

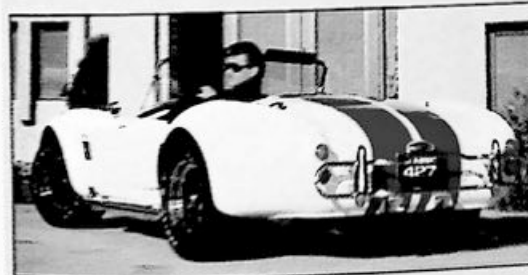
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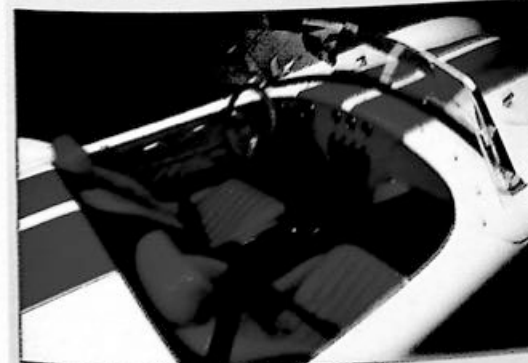
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